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# Notes on Elaterid Beetles (Coleoptera: Elateridae) from East Asia (I)

## Five New Species and a New Record of Elaterid beetles from Taiwan

Hisayuki ARIMOTO

Tedukayama-nishi 3–4–21, Sumiyoshi-ku, Osaka, 558–0052 Japan

**Abstract** Five new species of the elaterid beetles are described from Taiwan, under the names of *Ampedus lalashanus*, *Melanoxanthus lienhuachinus*, *M. matsudai*, *M. taiwanus* and *Hayekpenthes suginoi*. *Melanoxanthus doriae doriae* is recorded from Taiwan for the first time.

In this paper of the series of elaterid beetles from East Asia, I am going to describe five new species from Taiwan and record one species from Taiwan for the first time.

The abbreviations used for this study as follows: HAO (Hisayuki ARIMOTO's collection, Osaka); HHW (Hiroyoshi HIRAMATSU's collection, Wakayama); KMK (Kiyoshi MASAKI's collection, Kyoto)

The holotypes of the new taxa are deposited in the collection of the Osaka Museum of Natural History.

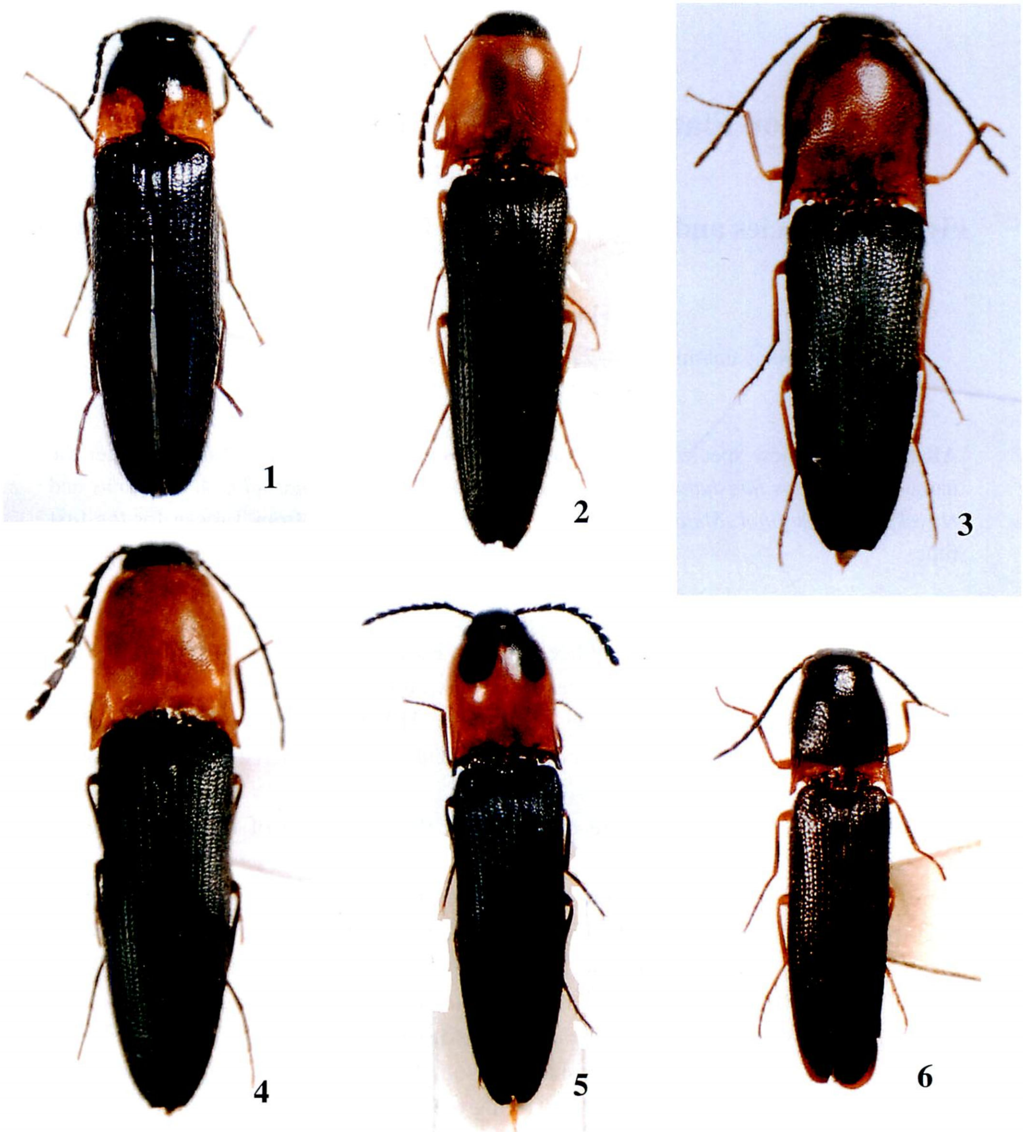
Before going further, I wish to express my sincere gratitude to Dr. Hitoo ÔHIRA in Okazaki for his constant guidance, and to Dr. Hisashi ASHIDA of the Graduate School of Biostudies, Kyoto University, for his critically reading the manuscript. I am also indebted to Dr. Wataru SUZUKI in Tokyo for his kind help in various ways. Thanks are also due to Messrs Hiroyoshi HIRAMATSU in Wakayama, Kiyoshi MASAKI in Kyoto, Kiyoshi MATSUDA in Kawanishi, Minori MIKI in Toyonaka, Koichi SUGINO in Kunigami-son, Kaoru WADA in Sagamihara and Akira YAMASHITA in Takaraduka for their kindly offering the specimens used in this study.

### *Ampedus lalashanus* sp. nov.

(Figs. 1, 7, 8)

Male. Length about 6.5 mm, width about 1.8 mm. Body elongate, almost parallel-sided, rather flattened above and shining; black, but lateral areas of pronotal basal half reddish yellow. Antennae dark brown, with second and third segments paler. Legs brown, with tarsi and claws yellowish brown. Dorsal surface clothed with black and semirecumbent setae, though reddish yellow areas on pronotum with reddish yellow setae; ventral surfaces with whitish yellow and recumbent setae.

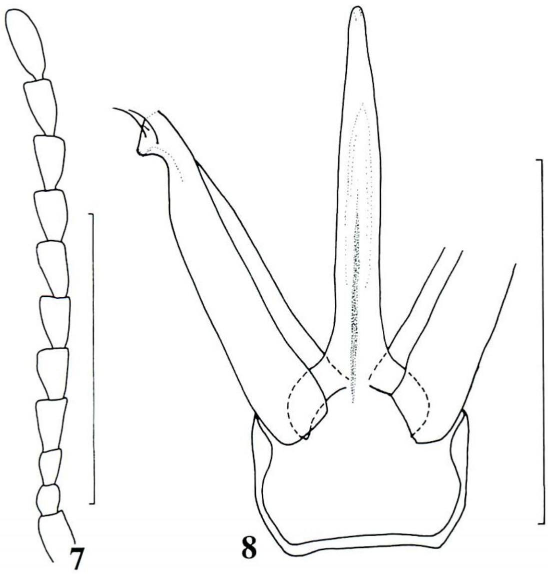
Head gently convex between eyes; surface coarsely and densely punctate; clypeal margin well ridged, rounded and more or less impressed at the middle, well ridged over antennal inser-



Figs. 1–6. Habitus of Elateridae spp. —— 1, *Ampedus lalashanus* sp. nov., holotype.; 2, *Melanoxanthus lienhuachihnus* sp. nov., holotype.; 3, *Melamoxanthus matsudai* sp. nov., holotype.; 4, *Melamoxanthus taiwanus* sp. nov., holotype.; 5, *Melamoxanthus doriae doriae* Candèze, 1878.; 6. *Hayekpenthes suginoi* sp. nov., holotype.

tions. Antennae (Fig. 7) short, not attaining to posterior angle of pronotum, basal segment robust and subclavate; the second short, subglobular and about 1.2 times as long as its width; the third obconical and about 1.2 times as long as the second; the fourth triangular and about 1.4 times as long as the third; from the fourth to tenth clearly serrate.

Pronotum subtrapezoidal, about 0.9 times as long as basal width, with sides almost parallel in basal half to each other, then feebly arcuate and convergent towards anterior angles; disc rather gently convex; surface smooth and rather sparsely punctate on disc, the punctures becoming sparser and smaller posteriad; posterior angles rather short, projecting posto-laterad, weakly



Figs. 7–8. *Ampedus lalashanus* sp. nov., holotype. —— 7, right antenna (scale: 1 mm); 8, male genitalia, dorsal view (scale: 0.5 mm)

pointed at each apex and without carina above. Scutellum lingulate, flattened and coarsely punctate.

Elytra about 2.8 times as long as its basal width, with sides almost parallel in basal three-fifths, then rounded and gradually convergent towards apices which are normally pointed; striae well defined, bearing elongate punctures; intervals elevated, sparsely and unevenly punctate, irregularly and transversely rugose.

Legs slender, tarsi and claws simple.

Propleura punctate in each apical three-fourths, the punctures larger and sparser than those of pronotal disc. Prosternum sparsely punctate, the punctures smaller and sparser than those of propleura. Prosternal process clearly incurved just behind procoxal cavites, then projecting straight towards apex, with apical underside clearly emarginate.

Dorsal surface of male genitalia as illustrated (Fig. 8); median lobe slender, a little longer than lateral lobes, gradually narrowed towards obtusely pointed apex; each apical portion of lateral lobe triangularly expanded, furnished with some long setae.

Female. Unknown.

*Type series.* Holotype : ♂, 5. V. 1982, Mt. Lalashan [拉拉山], Taoyuan Hsien, Taiwan, A. YAMASHITA leg.

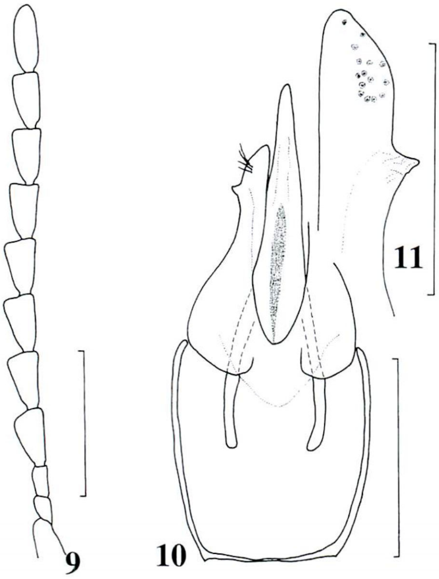
*Etymology.* The specific name is derived from the type locality, Mt. Lalashan.

*Notes.* This new species is somewhat allied to *Ampedus pseudoflavobasalis* SCHIMMEL, 1993 from Taiwan, but can be distinguished from the later by the following points: 1) body is distinctly smaller; 2) the punctures on the disc of pronotum are sparser; 3) propleura are usually reddish yellow except for the black portion on each apical half, whereas those of *A. pseudoflavobasalis* are usually entirely reddish yellow.

## ***Melanoxanthus lienhuachihnus*** sp. nov.

(Figs. 2, 9–11)

Male. Length about 10.5mm, width 2.5mm. Body moderately elongate, subparallel-sided, convex above and moderately shining. Head, antennae, elytra and scutellum black, but basal three segments of antennae and basal portion of scutellum dark reddish brown; pronotum, legs and most parts of ventral surfaces reddish yellow. Head and elytra clothed with black and recumbent setae; pronotum and ventral surfaces with reddish yellow and recumbent setae on all over.



Figs. 9–11. *Melanoxanthus lienhuachihnus* sp. nov., holotype. —— 9, right antenna (scale: 1 mm.); 10–11, male genitalia, dorsal view (scale: 0.5 mm for 10; 0.2 mm for 11).

Head moderately convex between eyes and flattened between antennae; surface coarsely and densely punctate; clypeal margin entire and rounded at the middle. Antennae (Fig. 9) short and barely attaining to tip of posterior angles of pronotum; basal segment robust and subclavate; the second short, subglobular and a little longer than wide; the third subcylindrical and about 1.2 times as long as the second; the fourth triangular and about twice as long as the third; from the fourth to tenth moderately serrate.

Pronotum subtrapezoidal, slightly wider than long at the middle, with sides slightly sinuate just before posterior angles, rounded at the middle, then clearly convergent towards anterior angles; disc noticeably convex, micro-reticulate, rather densely and shallowly punctate, posterior angles projecting posteriad and somewhat pointed apicad, each with a distinct a carina above. Scutellum triangular and obtusely pointed apicad; surface micro-reticulate, coarsely and irregularly punctate.

Elytra about 2.8 times as long as its basal width, gradually convergent from base to apical third, then rounded and convergent towards apices which are transversely truncate and broadly emarginate; striae well defined, deeply and regularly punctate; intervals flattened, micro-reticulate and weakly granulated in basal portions.

Legs slender, with tarsi and claws simple.

Prosternal process slightly incurved just behind procoxal cavities, then projecting straight towards obtusely pointed apex.

Dorsal surface of male genitalia as illustrated (Figs. 10–11 ); median lobe distinctly longer than lateral lobes, gradually narrowed towards obtusely pointed apex; each apical portion of lateral lobe semicircular and furnished with some long setae, with outer angle triangularly prominent laterad.

Female. Unknown.

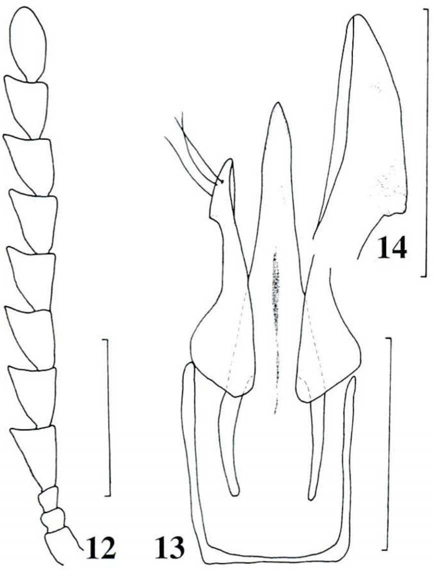
*Type series.* Holotype: ♂, Lienhuachih [蓮華池], Nantou Hsien, Taiwan, 31. V. 1975, K. MATSUDA leg.

*Etymology.* The specific name is derived from the type locality, Lienhuachih.

*Notes.* This new species is somewhat similar to *M. doriae doriae* CANDÈZE, 1878 from Borneo, Thailand, Laos and Taiwan, but can be distinguished from the latter by the following points: 1) the body is distinctly robuster; 2) the pronotum is without maculation, whereas that of *M. d. doriae* with a pair of black maculations; 3) the male genital apparatus are different in structures.

## *Melanoxanthus matsudai* sp. nov.

(Figs. 3, 12–14)



Figs. 12–14. *Melamoxanthus matsudai* sp. nov., holotype.12, right antenna (scale: 1 mm); 13–14, male genitalia, dorsal view. (scale: 0.5 mm for 13; 0.2 mm for 14).

Male. Length about 9.0 mm, width 2.5mm. Body rather robust, subparallel-sided, gently convex and moderately shining. Head reddish black; most parts of mouth parts reddish brown except for labrum black; antennae black except for basal three segments reddish black; pronotum reddish yellow, though lateral margins reddish brown to reddish black and basal margin orange yellow; scutellum and elytra black; most parts of ventral surface and legs reddish yellow, except for lateral margins of seventh sternite black and tarsi blackish brown. Dorsal surface clothed with black and recumbent setae except for basal margin of pronotum with orange yellow setae; most parts of ventral surfaces with black and recumbent setae.

Head gently convex between eyes and almost flattened between antennae; surface rather densely punctate; clypeal margin well ridged and rounded at the middle. Antennae (Fig. 12) short; apical segment not attaining to posterior angle of pronotum; basal segment robust and subclavate; the second short, subglobular and a little wider than long; the third obconical and a little longer than the second; the fourth triangular and about three times as long as the third; from the fourth to tenth strongly serrate.

Pronotun subquadrate, almost as long as wide at the middle; with sides nearly parallel from base to apical fourth to each other, then clearly arcuate and convergent towards anterior angles; disc clearly convex, surface micro-reticulate, rater densely punctate, the punctures sparser than those of head; posterior angles rather short, projecting posteriad and moderately pointed apically, each with a distinct carina above. Scutellum lingulate; flattened and micro-reticulate, coarsely and irregularly punctate.

Elytra about 2.4 times as long as its width, almost straight and gradually convergent from base to apical third, then rounded and gradually convergent towards apices which are transversely truncate and broadly emarginate; striae well defined, deeply and regularly punctate, intervals flattened, micro-reticulate and distinctly granulate in basal portions.

Legs slender, with tarsi and claws simple.

Prosternal prosess slightly incurved just behind procoxal cavity, then projecting straight towards obtusely pointed apex.

Dorsal surface of male genitalia as illustrated (Figs. 13–14); median lobe distinctly longer than lateral lobes, with sides almost parallel in basal three-fourths, then gradually rounded and convergent towards obtusely pointed apex; each apical portion of lateral lobes semicircular and furnished with many long setae.

Female. Unknown.

*Type series.* Holotype: ♂, Jihyuehtan [日月潭], Nantou Hsien, Taiwan, 28. V .1975. K. MATSUDA leg.

*Etymology.* The specific name is dedicated to Mr. Kiyoshi MATSUDA [松田潔] who found this remarkable species.

*Notes.* This new species is somewhat similar to *M. nigripennis* FLEUTIAUX, 1928 from Vietnam, Laos, Thailand and Taiwan, but can be distinguished from the latter by the following points: 1) the body is a little robuster; 2) the head and lateral margins of pronotum are usually reddish black, whereas those of *M. nigripennis* are reddish yellow; 3) the antennae are distinctly longer; 4) the male genital apparatus are different in structures.

## ***Melanoxanthus taiwanus*** sp. nov.

(Figs. 4, 15–17)

Male. Length 9.5–10.5 mm, width 2.5–2.8 mm. Body elongate, subparallel-sided, convex above and shining. Body black, prothorax reddish yellow except for black prosternal lobe and prosternal process; legs with femora and tibiae dark brown, trochanters, tarsi and claws reddish brown. Dorsal surface clothed with black and recumbent setae, though lateral and basal margins of pronotum with reddish yellow setae. Ventral surface with golden yellow and recumbent setae.

Head moderately convex between eyes and almost flattened between antennae; surface coarsely and densely punctate; clypeal margin well ridged and rounded at the middle. Antennae (Fig. 15) short; extending beyond posterior angles of pronotum at least by halves of apical segments; basal segment robust and aubclavate; the second subglobular; the third subcylindrical and about 1.3 times as long as the second; the fourth triangular and about 2.4 times as long as the third; from the fourth to tenth clearly serrate.

Pronotum subtrapezoidal, about 1.2 times as long as the median width, with sides almost parallel in basal third, then weakly arcuate and clearly convergent towards anterior angles; disc clearly convex, micro-reticulate, densely and rather shallowly punctate; posterior angles projecting postero-laterad and moderately pointed apically, each with a distinct carina above. Scutellum triangular and obtusely pointed apicad; surface micro-reticulate, coarsely and irregularly punctate.

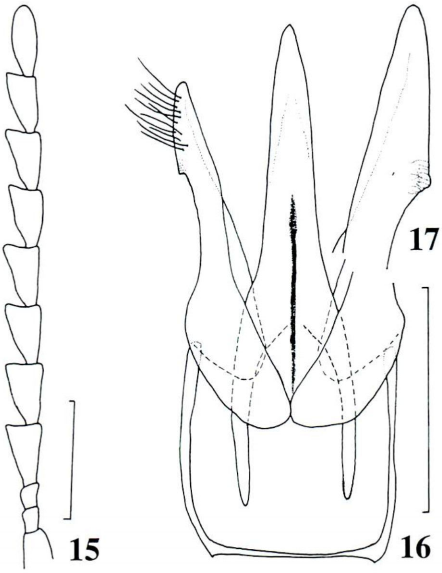
Elytra about 2.8 times as long as its basal width; with sides almost straight at side and gradually convergent from base to apical third, then rounded and convergent towards apices which are transversely truncate; striae well defined, deeply and regularly punctate, intervals flattened, micro-reticulate and distinctly granulated in basal portions.

Legs slender, with tarsi and claws simple.

Prosternal process slightly incurved just behind procoxal cavities, then projecting straight towards obtusely pointed apex.

Dorsal surface of male genitalia as illustrated (Figs. 16–17); median lobe a little longer than lateral lobes, with sides almost parallel in basal three-fourths, then gradually rounded and convergent toward obtusely pointed apex; each apical portion of lateral lobes semicircular and furnished with many long setae.

Female. Length 10.5–12.5 mm and width 2.5–3.3 mm. Similar to male in general struc-



Figs. 15–17. *Melamoxanthus taiwanus* sp. nov., holotype —— 15, right antenna (scale: 1 mm); 16–17, male genitalia, dorsal view. (scale: 0.5 mm for 16; 0.2 mm for 17).

tures, but the body robuster and antennae shorter, pronotum clothed with orange yellow setae only.

*Type series.* Holotype: ♂, Mt. Kuangtao-shan [関刀山], Nantou Hsien, Taiwan, 23. IV. 1999. Paratypes: 1 ♀, Nanshanchi [南山渓], Nantou Hsien, Taiwan, 17. V. 1973, K. MATSUDA leg. (KMK); 2 ♂♂, 2 ♀♀, Nanshanchi, Nantou Hsien, Taiwan, 11. V. 1980, J. LUO leg. (HAO); 1 ♂, Liukuei [六亀], Kaohsiung Hsien, 21. IV. 1995. (HAO); 1 ♂, Mt. Kuangtao-shan, Nantou Hsien, Taiwan, 19. IV. 1999, H. NARA leg. (HHW); 1 ♀, ditto, 22. IV. 1999, H. NARA leg. (HHW).

*Etymology.* The specific name is taken from the distributional area, Taiwan.

*Notes.* This new species is similar to *M. lienhwachinus*, but can be distinguished from the latter by the following points: 1) the body is robuster; 2) most parts of the ventral surface are-black, whereas those of *M. lienhwachinus* are reddish yellow; 3) the antennae are slightly shorter and more clearly serrated from the fourth to tenth segments. 4) the male genital apparatus clearly different structures.

## *Melanoxanthus doriae doriae* CANDÈZE, 1878

(Fig. 5)

*Melanoxanthus doiae* CANÈZE, 1878, Ann. Mus. Civ. Stor. nat. Giacomo Doria, Geneva, 12: 125 (Borneo: Sarawaku)

*Specimens examined.* 1 ♀, Lienhuachih [蓮華池], Nantou Hsien, Taiwan, 31. V. 1975, K. MATSUDA leg. (KMK); 1 ♀, Mt. Lalashan [拉拉山], Taoyuan Hsien, Taiwan, 22–24. VI. 1983, A. YAMASHITA leg. (HAO).

*Notes.* Up to the present, two different subspecies of this species, *Melamoxanthus d. doriae* CANDÈZE, 1878 from Borneo, Thailand and Laos, and *M. d. ryukyuensis* ARIMOTO, 2007 from the Ishigaki-jima Is. Ryukyus Japan, have been known. As a result of comparing with the Taiwanese specimens and the specimens of both the subspecies, the general features of the Taiwanese are well corresponded to those of the nominate subspecies *M. d. doriae*. This is the first record from Taiwan.

## ***Hayekpenthes suginoi*** sp. nov.

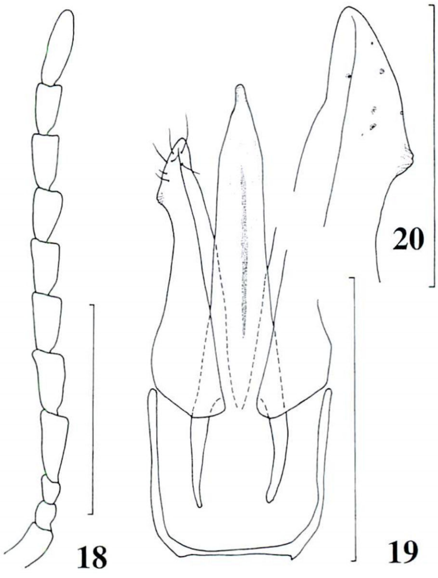
(Figs. 6, 18–20)

Male. Length 6.4–6.8 mm, width 2.4–2.5 mm. Body elongate, subparallel-sided, rather flattened above and shining. Head, antennae and pronotum black, except for basal three segments of antennae reddish brown and basal margin and posterior corners of pronotum usually dusky yellow; scutellum, elytra and most parts of ventral surface reddish black except for prosternal lobe dusky yellow; legs dusky yellow. Dorsal surface clothed with brownish and recumbent setae; ventural surface with yellowish setae.

Head gently convex between eyes and subvertical between antennae; surface glabrous and sparsely punctate; clypeal margin well ridged and rounded at the middle. Antennae (Fig. 18) rather short; almost attaining to tip of posterior angles of pronotum; basal segment robust and subclavate; the second subglobular and slightly wider than long; the third obconical and a little longer than the second; the fourth triangular and about three times as long as the third; from fourth to tenth moderately serrate and from fourth to ninth bearing a median longitudinally ridge on each outer surface.

Pronotum subtrapezoidal, almost as long as width at the middle, almost parallel in basal two-thirds, then feebly arcuate and clearly convergent towards anterior angles; disc gently convex, surface micro-reticulate and sparsely punctate, the punctures larger and sparser than those of head; posterior angles projecting posteriad and somewhat pointed apically, each with a distinct carina above. Scutellum lingulate, gently convex at the middle and coarsely punctate.

Elytra about three times as long as its basal width, almost parallel in basal halves, then rounded and gradually convergent towards apices which are transversely truncate; striae defined, bearing deep and elongate punctures in striae; intervals flattened, micro-reticulate and weakly granulated in basal portions.



Figs. 18–20. *Hayekpenthes suginoi* sp. nov., holotype. 18, left antenna (scale: 1 mm); 19–20, male genitalia, dorsal view (scale: 0.5 mm for 19; 0.2 mm for 20).

Legs slender, with tarsi and claws simple.

Prosternal process moderately incurved just behind procoxal cavites, then projecting straight towards obtusely pointed apex.

Dorsal surface of male genitalia as illustrated (Figs. 19-20); median lobe robust and a little longer than lateral lobes, slightly narrowed from base to apical fourth then rounded and convergent towards obtusely pointed apex; each apical portion of lateral lobe subtriangular and furnished with some short setae.

Female. Unknown.

*Type series.* Holotype: ♂, Jihyuehtan [日月潭], Nantou Hsien, Taiwan, 21. IV. 1974, K. Sugino leg. Paratype: 1 ♂, Lienhuachih [蓮華池], Nantou Hsien, Taiwan, 18. III. 1980, K.

Wada leg. (HAO).

*Etymology*. The specific name is dedicated to Mr. Koichi Sugino [杉野広一] who is the first discovered of this unique specimen.

*Notes*. This new species is somewhat allied *Hayekpenthes parallelaris* (Miwa, 1927) from Taiwan, but can easily be distinguished from the latter by following points: 1) the body is smaller; 2) the color black to reddish black whereas that of *H. parallelaris* is yellowish brown; 3) the antennae are distinctly shorter; 4) the male genital apparatus are different in structures.

## 要　約

有本 久之：東アジア産コメツキムシ科甲虫（第1報）・台湾産 Elaterinae 亜科の5新種および新分布記録1種．——— 今回，新たに5新種をそれぞれ，*Ampedus lalashanus*, *Melanoxanthus lienhuachihnus*, *M. matsudai*, *M. taiwanus*, *Hayekpenthes suginoi* と命名し記載した．また，*Melanoxanthus doriae doriae* Candèze, 1878 を台湾から新分布として記録した．

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# A New Species of *Amarygmus* DALMAN, 1823 from Japan (Coleoptera: Tenebrionidae: Amarygmini)*

Hans J. BREMER
Osning St. 9, 49326 Melle, Germany

and

Kiyoshi ANDO
Entomological Laboratory, Faculty of Agriculture, Ehime University,
5–7, Tarumi 3-chôme, Matsuyama, 790–8566 Japan

**Abstract** A new species of *Amarygmus* DALMAN, 1823 from Japan is described and illustrated: *Amarygmus incognitus* sp. nov. This is the 7th species of this genus from Japan.

**Key words**. Insecta; Coleoptera; Tenebrionidae; Amarygmini; *Amarygmus*; new species; Japan.

## Introduction

The genus *Amarygmus* DALMAN, 1823 contains nearly 650 validly described species. The majority of these arboreal species occur in the tropical parts of the Oriental and the Papuan faunal areas and clearly decreases the number of species towards the more temperate climates. From Japan only six species had been known until recently: *Amarygmus curvus* MARSEUL, 1876 (from the main islands), *A. cuprarius* ssp. *cuprarius* (WEBER, 1801) (from Ishigaki Is.), *A. picitarsis* (FAIRMAIRE, 1882) (from Shimoji-jima Is.), *A. (Pyanirygmus) mizusawai* (YAMAZAKI, 1968) (from Amami-Ôshima Is.), *A. iridicollis* (NAKANE, 1968) (from Okinawa Islands) and *A. izumii* (MASUMOTO, 1983) (from Ishigaki Is.). An additional new species is described as the seventh of the genus in Japan under the name *A. incognitis*, which is related to a group of numerous, very similarly looking and small species occurring from India to the Great Sunda Islands.

## Abbreviations

CA = Collection of Dr. K. ANDO, Osaka
CM = Collection of Prof. Dr. K. MASUMOTO, Tokyo
EUMJ = The Faculty of Agriculture, Ehime University, Matsuyama
MNHP = Muséum National d'Histoire Naturelle, Paris

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* This is the 54th paper of the revision of the genus *Amarygmus* DALMAN, 1823 of the senior author and "Contribution to the knowledge of Japanese Tenebrionidae (5)" of the junior author.

NHM = Natural History Museum, London
NSMT = National Science Museum (Nat. Hist.), Tokyo
ZMUK = Zoologisk Museum, Universitet Copenhagen, Copenhagen
ZSM = Zoological State Collection, Munich.

The formerly known Japanese species of the genus *Amarygmus* possess the following synonyms and changes of generic combinations:

### ***Amarygmus cuprarius cuprarius*** (WEBER, 1801)

*Helops cuprarius* WEBER, 1801: 40.
*Amarygmus cuprarius* (WEBER, 1801): GEMMINGER & de HAROLD, 1870: 2023.
*Amarygmus iridipennis* FAIRMAIRE, 1893: 58; [syn.]: BREMER, 2001b: 87.
*Amarygmus callichromus* FAIRMAIRE, 1897: 70; [syn.]: BREMER, 2001b: 87.
*Amarygmus laosensis* PIC, 1922a: 304; [syn.]: BREMER, 2005b: 54.

Distribution: Taiwan; Japan (Ryukyu Arch.: Ishigaki Is., Taketomi Is., Yaeyama-Kuroshima Is., Iriomote Is.; Southern China; Vietnam; Laos; Thailand; Malayan Peninsula; Sumatra; Mentawei Isls.; Borneo; Java; Flores; Australia.

*Notes.* Lectotype and one paralectotype of *Helops cuprarius* WEBER are deposited in ZMUK; holotype of *Amarygmus iridipennis* FAIRMAIRE in MNHP, two syntypes of *Amarygmus callichromus* FAIRMAIRE in MNHP, holotype of *Amarygmus laosensis* PIC in MNHP.

Redescription and illustration: BREMER, 2005: 54–57.

### ***Amarygmus curvus*** MARSEUL, 1876

*Amarygmus curvus* MARSEUL, 1876: 316.
*Elixota curva* (MARSEUL, 1876): LEWIS, 1894: 465.
*Amarygmus curvus* MARSEUL, 1876: BREMER, 2001a: 57.
*Anacycus pellegrini* PIC, 1922: 1922b: 24.
*Elixota pellegrini* (PIC, 1922): GEBIEN, 1944: 513.
*Amarygmus pellegrini* (PIC, 1922); [syn.]: BREMER, 2001b: 85.

Distribution: Japan (Hokkaido, Honshû, Sado Is., Izu Is. (Mikura-jima), Shikoku, Kyushû, Tsushima Is, Yakushima Is.); Korea.

*Notes.* Holotype of *Amarygmus curvus* MARSEUL is deposited in NHM, of *Anacycus pellegrini* PIC in MNHP.

### ***Amarygmus iridicollis*** (NAKANE, 1968)

*Elixota iridicollis* NAKANE, 1968: 83.
*Amarygmus iridicollis* (NAKANE, 1968): BREMER, 2001a: 57.

Distribution: Japan (Ryukyu Arch.: Amami-Ôshima Is., Tokunoshima Is., Okinawa-hontô, Miyako-jima Is.).

*Notes.* Holotype is deposited in Hokkaido University Museum.

### *Amarygmus izumii* (MASUMOTO, 1983)

*Elixota izumii* MASUMOTO, 1983: 81.
*Amarygmus izumii* (MASUMOTO, 1983): BREMER, 2001a: 57.

Distribution: Japan (Ryukyu Arch.: Ishigaki Is., Iriomote Is.).

*Notes.* Holotype is deposited in NSMT; 1 paratype in MNHP, 1 paratype in NHM.

### *Amarygmus picitarsis* (FAIRMAIRE, 1882)

*Cnodalon aeneum* WIEDEMANN, 1821: 154.
*Amarygmus aeneus* (WIEDEMANN, 1921): LAPORTE de CASTELNAU, 1840: 234 [homonym].
*Dietysus picitarsis* FAIRMAIRE, 1882: 250.
*Amarygmus picitarsis* (FAIRMAIRE, 1882): GEBIEN, 1944, 504; [syn.]: BREMER, 2001b: 88.
*Amarygmus blaisei* PIC, 1923: 21; [syn.]: BREMER, 2001b: 88.
*Amarygmus aeneus* var. *rouyeri* PIC, 1951: 18; [syn.]: BREMER, 2001b: 88.
*Amarygmus inadai* MASUMOTO et AKITA, 2001: 21; [syn.]: BREMER, 2005a: 59.

Distribution: Java; Borneo; Sumatra; Mentawei Isls.; Bali; Lombok; Sumbawa; Peninsular Malaysia; Southern Thailand; Vietnam; Japan (Ryukyu Arch.: Okinawa group: Shimoji-jima Is.); Taiwan; Sri Lanka (BREMER, 2007: 51).

*Notes.* Lectotype and two paralectotypes of *Cnodalon aeneum* WIEDEMANN are deposited in ZMUK; the holotypes of *Dietysus picitarsis* FAIRMAIRE, of *Amarygmus blaisei* PIC, and of *Amarygmus aeneus* var. *rouyeri* PIC in MNHP; the holotype of *Amarygmus inadai* MASUMOTO et AKITA in NSMT, paratypes in CM and CA.

Redescription and illustration: BREMER, 2005a: 58–61.

### *Amarygmus* (*Pyanirygmus*) *mizusawai* (YAMAZAKI, 1968)

*Plesiophthalmus mizusawai* YAMAZAKI, 1968: 27.
*Amarygmus*, s. g. *Pyanirygmus*, *mizusawai* (YAMAZAKI, 1968): BREMER 2005b: 208.

Distribution: Japan (Ryukyu Arch.: Amami-Ôshima Is.).

*Notes.* Redescription in MASUMOTO, 1990: 708; illustration pp. 695 and 706.

## Morphometry

Length corresponds to distance between the middle of anterior edge of prothorax and apices of elytra, width is the maximum width across the elytra; length of elytra is the distance between the base of scutellum and apices of elytra; length of prothorax is the distance between the middle of their anterior and posterior edges.

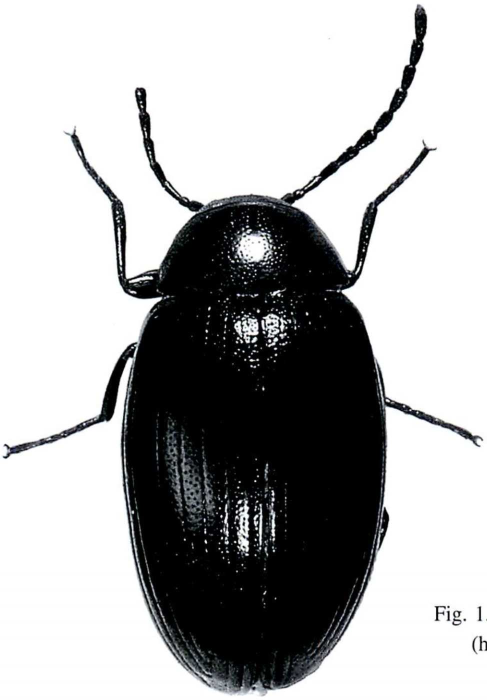


Fig. 1. *Amarygmus incognitus* sp. nov., habitus (holotype).

## Description of the new species

### *Amarygmus incognitus* sp. nov.

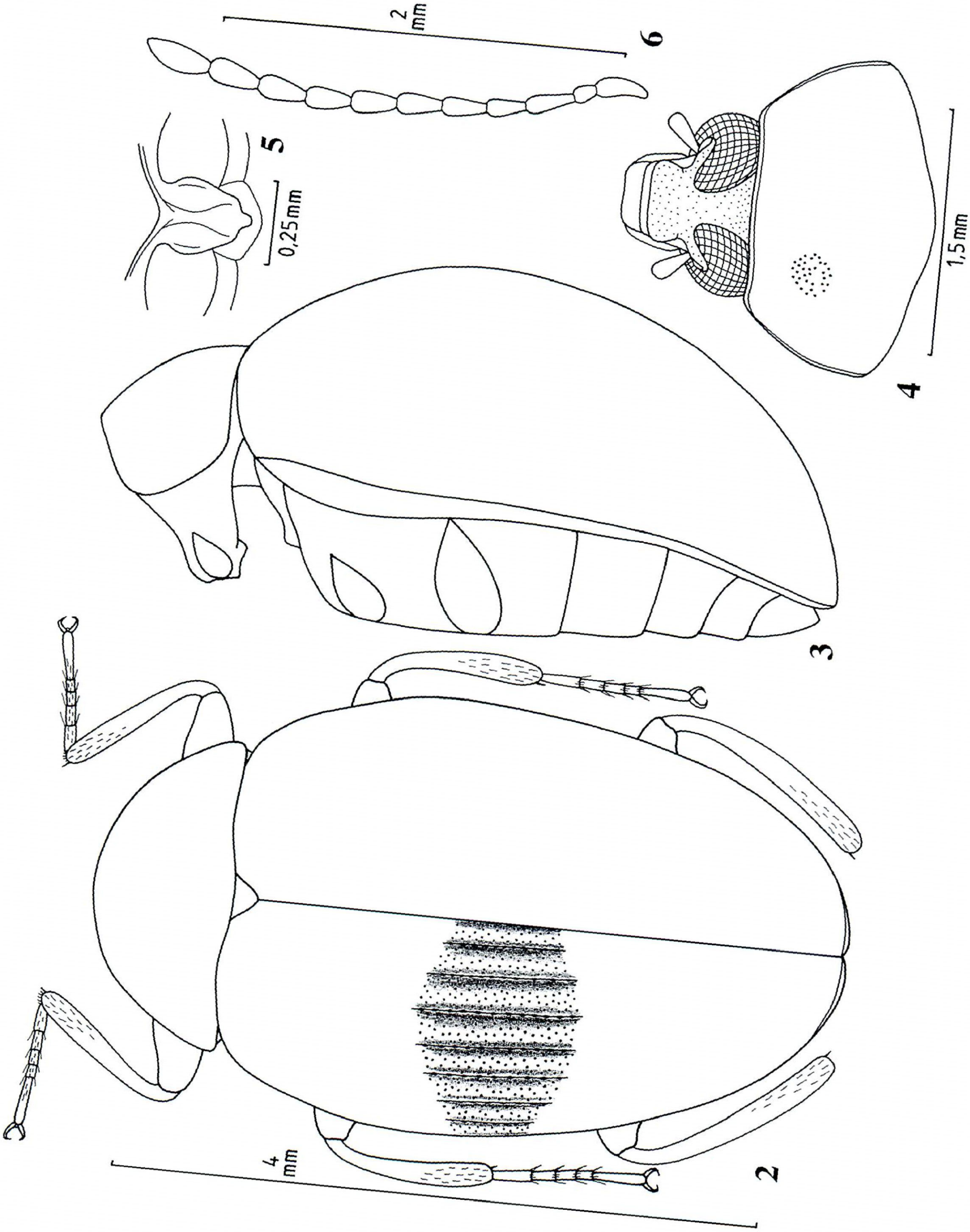
(Figs. 1–6)

Holotype, ♀, EUMJ: Mt. Ukidake, Nanayama Vill., Karatsu, Saga, 26. V. 2007, K. ANDO leg.

A second specimen was partially destroyed, same data as the holotype (1♀, ZSM) (the elytra remain intact), therefore not labeled as paratype.

*Diagnosis*. Small, ovate, with moderately incised striae on the elytra and well visible punctation of the intervals; frons not very broad; antennae long; legs short, upper side dark brown.

Belongs to a group of similarly looking species which occur from India to the Great Sunda Islands. The new species presents the same size and width of the frons as *A. aenescens* (FAIRMAIRE, 1896) which shows a disjunct distribution (South India, Tioman Islands of Malaysia) but *A. incognitus* has longer antennae and longer prothorax, and the punctures within the striae are smaller than in *A. aenescens*. Other similar species are *A. parvus* PIC, 1926, and *A. mollis* BREMER, 2001a. *A. parvus* is known from the Is. Hainan (South China), the vicinity of Hong Kong, Vietnam, Laos, and Thailand, and *A. mollis* has been collected in the northern parts of Thailand and Vietnam. *A. parvus* is longer than in body length and the penultimate antennomeres and the prothorax are shorter than in *A. incognitus* (but the length of the antennae and the width of the frons is similar in both species). *A. mollis* is on average slightly longer than *A. incognitus* in body length, the antennae of both species are similarly long but the frons between



Figs. 2–6. *Amarygmus incognitus* sp. nov.: 2, Habitus, female; 3, body lateral; 4, head and prothorax; 5, prosternal apophysis; 6, antenna.

eyes of *A. mollis* is markedly narrower than in *A. incognitus*.

**Description**. *Measurements*. Length: 4.47–4.94 mm. Width: 2.53–2.76 mm.

*Ratios*. Prothorax: width/length 1.76–1.88; width hind corners/with front corners 1.74–1.85. Elytra: length/width 1.49–1.56; length elytra/length prothorax 3.83–3.88; maximum width elytra/maximum width prothorax 1.38–1.39.

*Colour*. Upperside blackish brown except scutellum which is brown, slightly lustrous; femora brown and tibiae dark brown, tarsomeres lighter brown. Underside brown, lustrous.

*Head*. Width of frons between the eyes relatively narrow. Eyes very large circumventing the genae and the root of antennae. Genae narrow, scarcely raised, terminating in front of the middle part of the fronto-clypeal suture. Fronto-clypeal suture narrowly incised in its middle part, lateral parts invisible. Clypeus moderately stretched forwards, plain. Clypeus and frons not strongly punctulate. Mandibles bifid at apex.

*Prothorax*. Relatively long, transversely strongly convex, longitudinally less convex, broadest at the hind corners, narrowed apicad, its lateral margins approximately continue the outline of the elytra; front corners rounded; anterior margin straight. Disc bordered at lateral and anterior margins. In dorsal view the borders of the sides are very narrowly visible in their whole length. At sidelong glance the front corners and the hind corners are obtuse. Surface with medium-sized, closely packed punctures, microreticulated between the punctures.

*Scutellum*. Triangular, with a few tiny punctures.

*Elytra*. Ovate and somewhat elongate, transversely markedly convex, longitudinally arched; maximum of height and width approximately in the middle. Shoulders somewhat retracted. Apices of elytra mutually rounded. Lateral edges invisible in dorsal view. Surface with narrow, slightly incised striae in which the very small punctures are scarcely detectable. Intervals on disc very slightly arched, and moderately so laterally; with relatively dense and small punctures.

*Prosternum*. Anterior margin narrowly bent up, medianly retracted towards apophysis. Apophysis broadened next to procoxae, their sides being raised ventrad, space between them bearing a shallow trough medianly, the sides slightly constricted behind the coxae and then abruptly bent towards the middle; the apex conical in the middle.

*Mesosternum*. Mesosternum with short anterior part, emarginate at anterior margin in middle, constricted at sides with a deprssion in middle.

*Metasternum*. Punctures of medium-sized in anterior part, becoming smaller posteriorly in posterior part.

*Sternites*. Anterior margin between the metacoxae ogival, bordered. On the disc of the 1st sternite with some small punctures, sternites 2 to 5 nearly impunctate.

*Antennae*. Of medium length, bent backwards overlapping the elytra approximately to their middle; the penultimate antennomeres nearly cylindrical. Lengths and width of antennomeres 1 to 11 corresponding to 12:5 / 3:2 / 11:4 / 10:4.5 / 12:5 / 12:5.5 / 12:5.5 /12:5.5 / 12:5.5 / 12:5.5 / 18:6.

*Legs*. Short. Femora towards the second-thirds broadened club-like. Protibiae straight, mesotibiae slightly bent, metatibiae bent. The metatarsomeres are missing.

*Etymology*. Incognitus (lat.) means unknown.

## 要　　　約

Hans J. Bremer・安藤 清志：日本産マルキマワリ属の１新種．———— 九州北部の佐賀県唐津市（旧七山村）浮岳（標高 805 m）で採集された小型種が新種と判明したので，キュウシュウマルキマワリ*Amarygumus incognitus*と命名して記載した．採集時の記憶では，中腹の日当たりの良い場所で枯れた蔓草のビーティングで獲られた．本種は，本属内でインドからスンダ列島にかけて分布するグループに類似している．最も近似であると考えられる南インドとマレーシアで記録のある *A. aenescens* (Fairmaire, 1896) とは，触角や前胸背板の長さや，鞘翅条溝の点刻が異なる．他に *A. parvus* Pic (南中国，海南島，香港，ベトナム，ラオス，タイ) や *A. mollis* Bremer（タイ北部，ベトナム）とも比較を行ったが，体型，触角，前胸背板や複眼間の幅に明瞭な相異が認められた．邦産の本属の種が７種となったので，邦産種のリストを作成した．

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*Entomological Review of Japan*, **64** (1): 19–24, June 30, 2009

# Past Distribution of *Carabus granulatus* LINNAEUS (Coleoptera: Carabidae) at Last Glacial Maximum in Shiga Prefecture, Western Japan

Shigehiko SHIYAKE
Osaka Museum of Natural History
Nagai Park 1–23, Higashi-sumiyoshi-ku, Osaka, 546–0034 Japan

**Abstract** A fossil pronotum of *Carabus grannulatus* LINNAEUS was yielded from a peat bed accumulated at around the Last Glacial Maximum (ca. 25,000) in Hikone, Shiga Prefecture, western Japan. This species is presently distributed only in the eastern half of Japan. A previous study on paleovegetation in the same site indicated the past condition to have been a marsh and the paleoclimate to have been colder than the present. The presence of this beetle species supports the previously described past ecological condition, but does not lead to the conclusion that the climate was colder because of its wide thermal tolerance.

## Introduction

During the Quaternary period, warm and cold climate have been alternately repeated on the earth. The most recent age of the very cold climate (Last Glacial Maximum) was about 25,000 to 15,000 years before present (y. B. P.). The paleoclimate is estimated to have approximately been about 7° C lower than the present in Japan (YASUDA and MIYOSHI, 1998).

The utility of beetles as paleoclimatic proxies has gradually been admitted (ELIAS, 1993: ELIAS, 2007). However, only a few studies in Japan have thus far been performed (HAYASHI, 2007). KOKAWA and YOSHIDA (1956, 1964) are the only papers on fossil beetles from the Last Glacial period in Kinki District. These paleobotanists reported two beetle genera, *Donacia* and *Oodes*, from peat beds in two sites (Hôryuji and Imasato) in Nara Basin. But neither study identified specimens to the species level nor further studies have so far been done.

The author investigated a peat bed accumulated around the Last Glacial Maximum in Hikone, Shiga Prefecture, and a fossil pronotum of *Carabus grannulatus* LINNAEUS was yielded there. Description of the fossil and discussion on its significance are made as follows.

## Study Site and Geology

The fossil was found on the riverbed of River Seri, at Obori, Hikone, Shiga Prefecture., alt. ca.100 m, N35°14'42", E136°16'21" (Fig. 1). Two tephras correlated with the Aira-Tn (AT) ash and the Kitoragawa volcanic ash are intercalated in the peat bed (OOI and TSUJI, 1989). The fos-

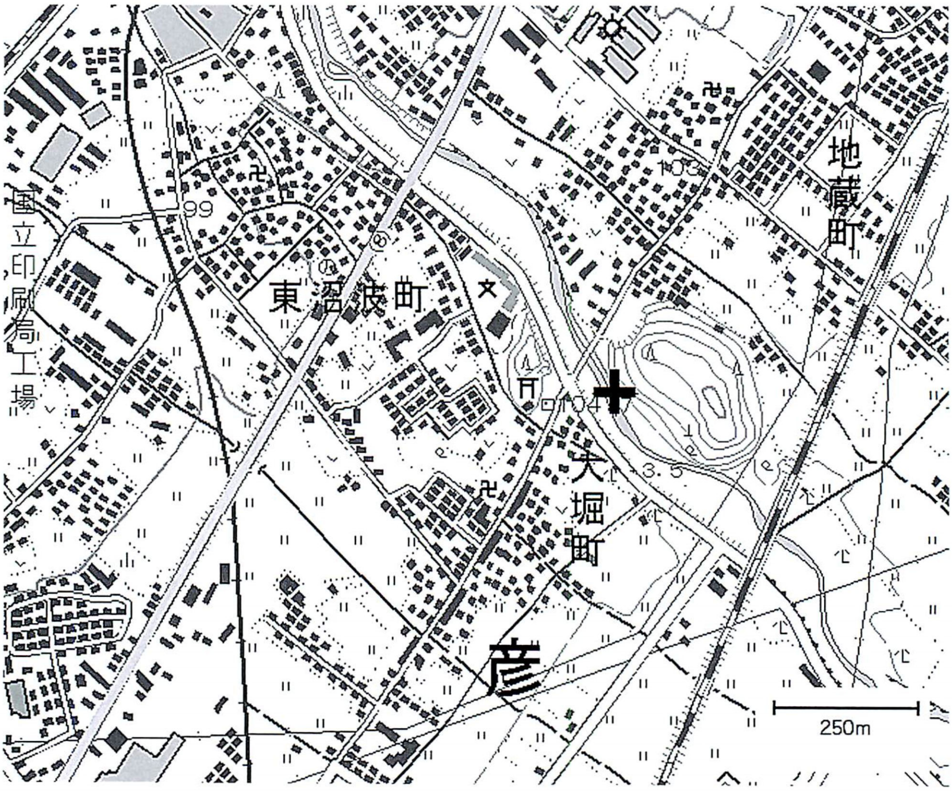

Fig. 1. Locality of the study site. Topographical map "Takamiya" by Geographical Survey of Japan.

sil pronotum reported in this paper was yielded from the upper part of the peat by the observation method of block-splitting described in Fossil Insect Research Group for Nojiri-ko Excavation (1988). The AT ash is known as a wide spread tephra by a giant eruption in 26,000 to 29,000 years B. P. from Aira Caldera, southern Kyûshû (MACHIDA and ARAI, 2003). Radiocarbon age of the upper peat is already reported as 16,230±400 y. B. P. (OOI and TSUJI, 1989).

Through the palynological study of the site (OOI and TSUJI, 1989), the paleovegetation has been reconstructed as folllows: The upland was covered with the mixed forest of conifers (*Pinus*, *Tsuga* and *Abies*) and broad-leaved deciduous trees (*Quercus*, *Betula*, *Carpinus-Ostrya* and *Ulmus*), and the vegetation in the lowland was grassland consisting mainly of Cryperaceae, Gramineae, Sanguisorba, Thilictrum and Umbellifeae, in which stands of *Alnus*, *Fraxinus*, *Myrica* and *Salix* are mixed.

The paleovegetational reconstruction indicates that the climate of the age was much colder than that in the present time as assumed by other paleoecological studies in Kinki District (YASUDA and MIYOSHI, 1998, etc.).

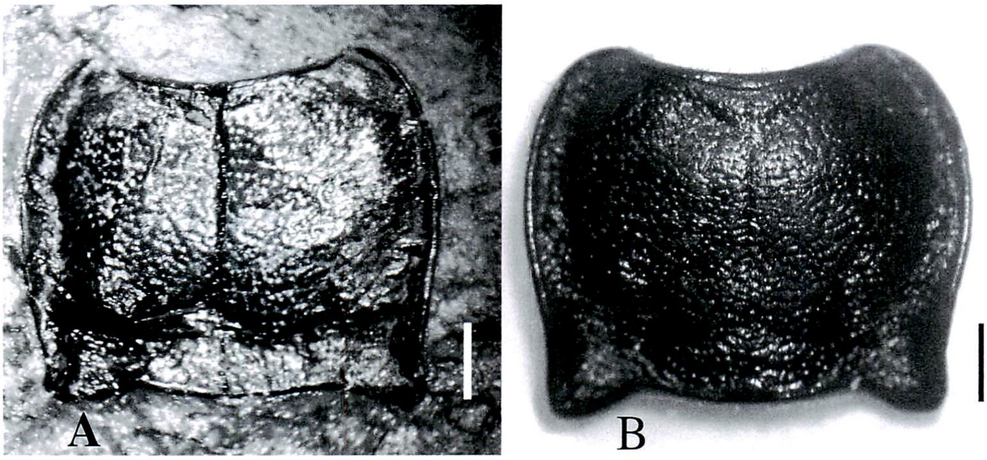

Fig. 2. Pronota of *Carabus granulatus*. A: Fossil from Hikone, Shiga Prefecture. B: Specimen from an extant population at Shiura, Kita-tsugaru, Aomori Prefecture. Scale: 1 mm.

## Description and Identification

(Fig. 2A)

Pronotum. Length: 4.5 mm, width 5.3 mm. Coloration black. Central suture complete. Punctures on surface rough and unclear, forming many elongate and protean rugae. Anterior margin fringed, broadly emarginate. Anterior angles rectangular. Lateral margins fringed with depressed areas, broadly curved outward with peaks at anterial 2/5, constricted at posterial 1/7. Posterior angles protrudent and acutely angulate with rounded apicies. Posterior margin weakly fringed, gradually and broadly produced in the middle. Basal fovea deep and transverse with fine punctures.

After comparison with many *Carabus* species in the Insect Collection of the Osaka Museum of Natural History, the fossil is identified as a pronotum of *Carabus granulatus* LINNAEUS (Fig. 2B). The fossil specimen is preserved in the Osaka Museum of Natural History.

## Discussion

*Carabus granulatus* is hygrophilous preferring moisture (BUCKLAND, 2006). Since OOI and TSUJI (1989) already stated that the site had been a marsh or wet grassland in that age, yield of the fossil supports the past local condition of the site.

The present distrubution of this species in Japan is limited to eastern Japan northeast of Prefectures Niigata and Kanagawa (East Japan Research Group of Carabid Beetles, 1989). The yield of the pronotum proves that the distribution had been extended westward in the past (Fig. 3).

This species has a wide distribution in the Eurasian continent including South Europe. The status of the climatic preference in this species is already established based on the present distribution and the climate data, resulting in the climatic envelope which is based on two parameters, T-Max and T-Range. The climatic envelope is open to the public through a software by Buckland (2003): T-Max is the mean July temperature and T-Range is the difference between the mean July and mean January temperature (Refer to ATKINSON *et al*., 1986 and ELIAS, 1993 for

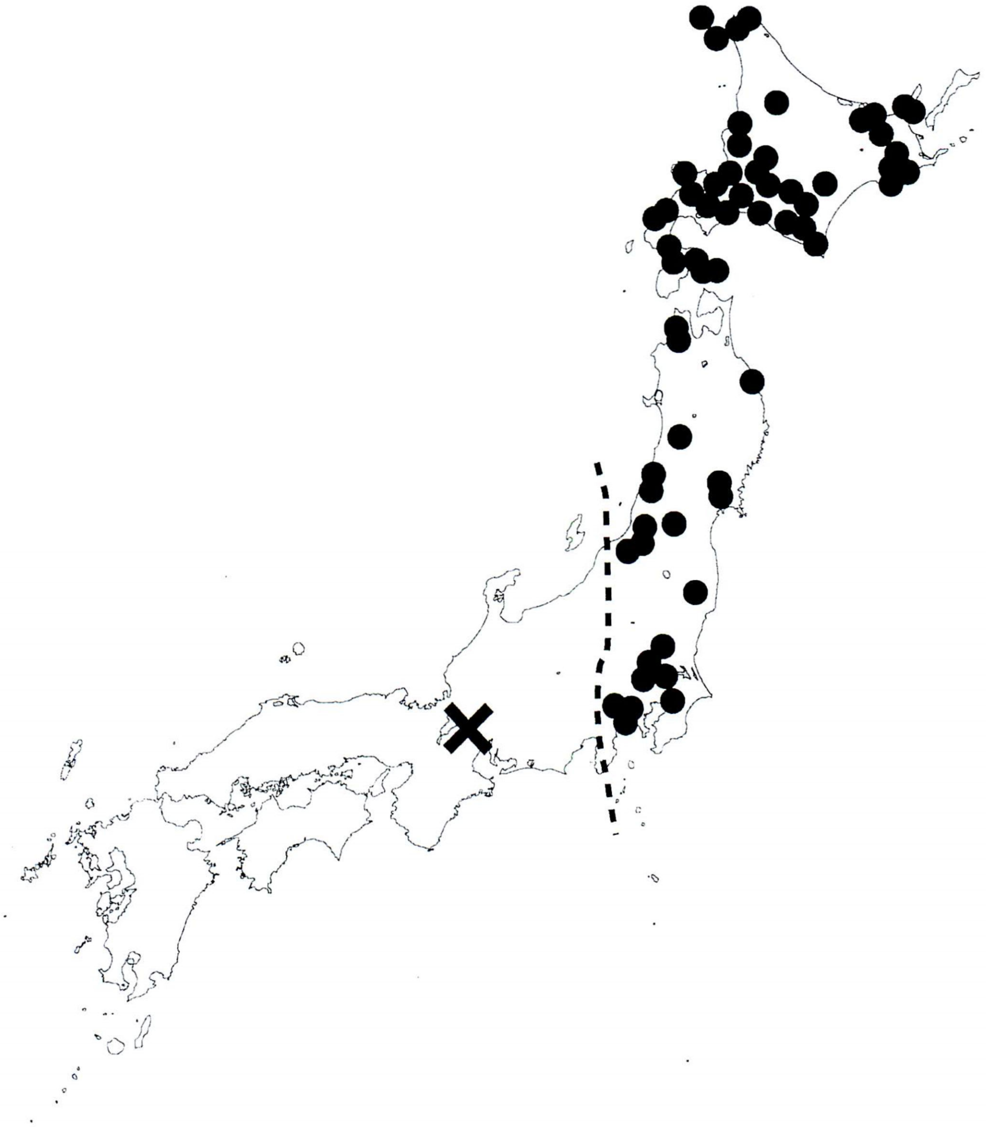

Fig. 3. ●: Present distribution of *Carabus granulatus* in Japan (East Japan Research Group of Carabid Beetles, 1989). ×: Fossil site.

the use of the envelope for paleoclimatic reconstruction). Since the present climate in Hikone is involved in the climatic envelope of *C. granulatus*, the extinction in Hikone cannot be due only to the climatic increase in temperature (Fig. 4). For the paleoenvironmental reconstruction from the entomological viewpoint, further study, with addition of other beetle taxa to the analysis, should be conducted.

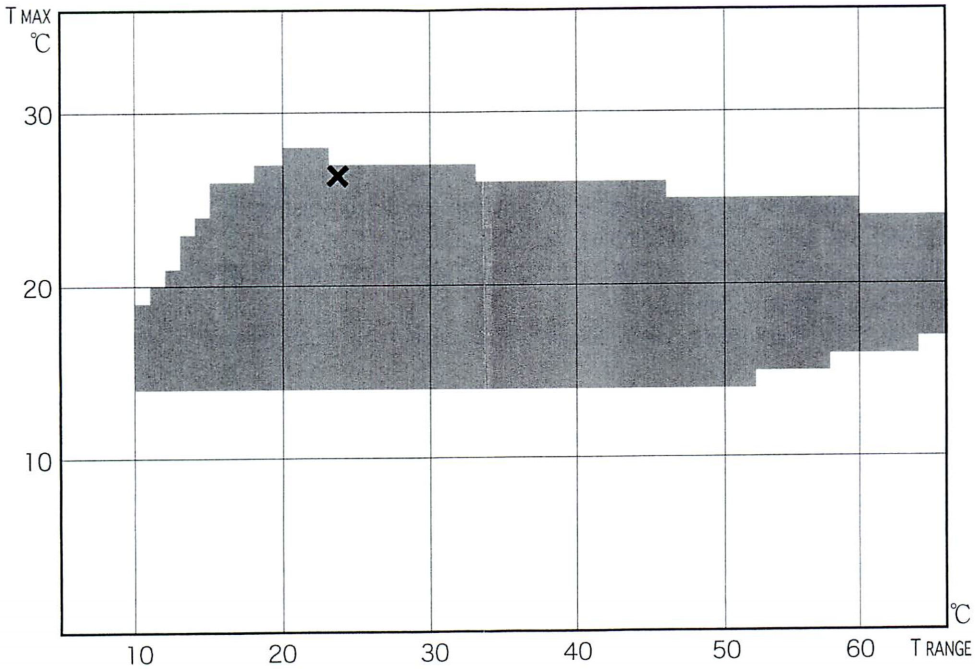

Fig. 4. Climatic envelope for *Carabus granulatus* based on climatic parameters (T-Max and T-Range) of collecting localities (Buckland, 2003). The mean July temperature of the localities where this species is distributed ranges between 15° and 28° C, and the plot for the present climatic condition at Hikone (×: 26.7 in T-Max and 23.1 in T-Range) is included inside of the envelope.

## Acknowledgments

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## 要　　約

初宿　成彦：最終氷期の滋賀県におけるアカガネオサムシの分布について（甲虫目オサムシ科）．——— 滋賀県彦根市の最終氷期最盛期頃（約２万５千年前）に堆積した泥炭層において，アカガネオサムシ *Carabus granulatus* Linnaeus の前胸背板が産出した．本種は現在では東日本にのみ分布している．同調査地において行われた古植生研究で，当時は湿地環境で，現在よりも寒冷な気候であったことが示されている．本種の産出により，現地が湿地であったことは同様に推定されるものの，本種が広い温度嗜好を持つために，当時の気候については推定ができない．

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# Notes on the Species of Staphylinidae (Coleoptera) from Japan XIV. Descriptions of the Two New Species Belonging to *Lathrobium* from Japan

Tateo ITO
E12–102, Otokoyama Yutoku 7, Yawata, Kyoto, 614–8371 Japan
E-mail : itokyoto@gb3.so-net.ne.jp

**Abstract** The two new *Lathrobium* species with degenerated eyes are described: *Lathrobium kitayamai* sp. nov. and *Lathrobium daibosatsu* sp. nov. The *yozawanum* species group is established for *L. yozawanum* and the present new species, and a distributional map of all the species of this group is shown.

More than ten years ago I had an opportunity to examine two species of the genus *Lathrobium*, which are similar to *L. yozawanum* WATANABE and apparently seem to be *Lobrathium* or *Domene* species in general appearance, through the courtesies of Dr. Shun-Ichiro NAOMI (Natural History Museum and Institute, Chiba) and Mr. Kenji KITAYAMA (Hirakata City, Osaka Prefecture), respectively. The latter was collected by digging of the upper hypogean habitat in Nagano Prefecture by Mr. K. KITAYAMA himself.

Before going further I would like to express my cordial thanks to Dr. Shun-Ichiro NAOMI and Mr. Kenji KITAYAMA for their kindly offering me the invaluable materials used in the present study.

## The *yozawanum* Group

After careful and close examination on these specimens, I concluded that *L. yozawanum* and these species constitute a species group. Therefore, in this study I would like to establish the *yozawanum* species group with those species. The species of the *yozawanum* group share the following characteristics *i.e.* the inhabitant in the upper hypogean habitat and /or cave, the eyes and wings degenerated, the head orbiculate in shape and the basal visible five abdominal segments each with a short longitudinal keel along the middle at base, etc. The group is composed of the following three species: *L. yozawanum* WATANABE, *L. kitayamai* sp. nov., and *L. daibosatsu* sp. nov. The distributional map of the above three species is additionally shown (Fig. 7).

## *Lathrobium kitayamai* T. ITO, sp. nov.

(Fig. 1–3)

Body moderately sized, subparallel-sided, rather convex dorsad, shining, reddish brown; pronotum, base of elytra and basal segments of abdomen darker; mouth parts except mandibles, antennae and tibiae paler. Pubescence brown to dark brown, those on mouth parts, antennae and legs somewhat yellowish. Length: 8.0–8.5 mm (from apical margin of head except labrum and mandibles to anal end).

Head suborbicular, slightly longer than wide (1.14 : 1.00), widest behind eyes, evenly and arcuately convergent to neck from the widest point; surface covered with close and rather coarse setiferous punctures, which are distinctly coarser and less close on frontal area than basal half area, throughout with a perceptible microsculpture except for impunctate clypeofrontal area; eyes extremely small, hardly visible when viewed from above but whose upper ridges apparently so; antennae elongate, extending beyond the basal margin of peonotum, basal two segments polished and the remainings dull, slightly thickened distad, all segments distinctly longer than wide, 1st segment large and robust, more than twice as long as wide, 2nd segment short and about half length of the preceding one, 3rd segment long and nearly twice as long as wide, from which to 10th decreasing in length and scarcely increasing in width, 9th segment subequal to 10th both in length and width, 11th segment as wide as and longer than 10th (1.16 : 1.00).

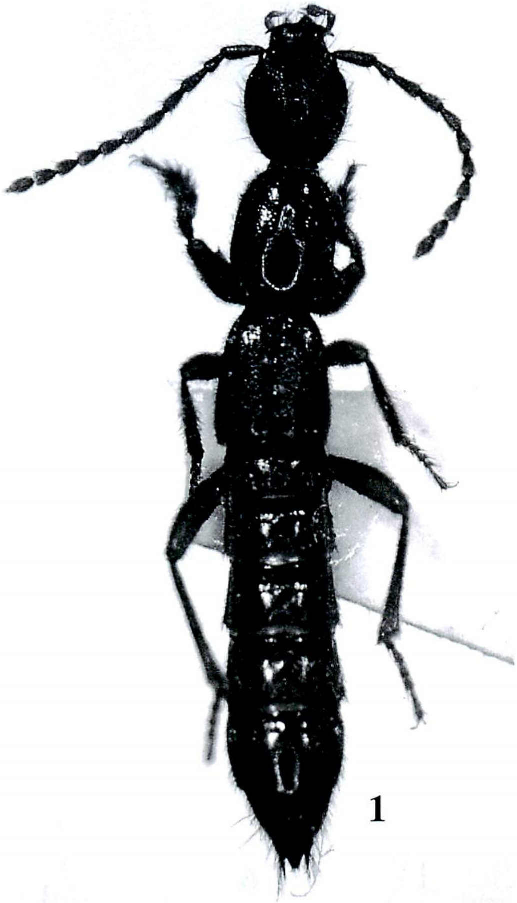
Pronotum oblong, scarcely rounded laterally, longer than wide (1.32 : 1.00), and longer (1.15 : 1.00) and as wide as head, coarsely, rather sparsely and more or less regularly punctate except for median longitudinal line which is rather wide and smooth, without microsuclpture; the punctures sparser and coarser than on head in basal half area; apico-lateral margins inclusively at corners invisible from above, but thick throughout as well as both apical and basal margins. Scutellum triangularly elongate, almost impunctate, with a few puncuteres and distinct microsculptures.

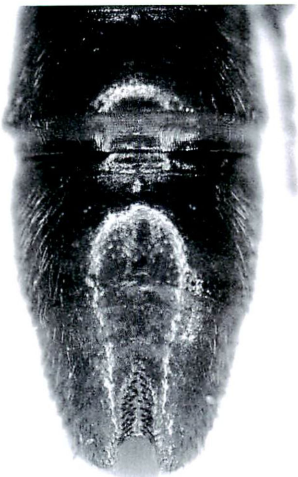
Elytra slightly widened apically, longer (at shoulders) than wide (1.20 : 1.00), nearly as long as and wider than pronotum (1.11 : 1.00), coarsely and sparsely punctate, uniformly pubescent, without any long conspicuous setae, and with a hardly perceptible microsculptures. Hind wing degenerated to a minute lobe.

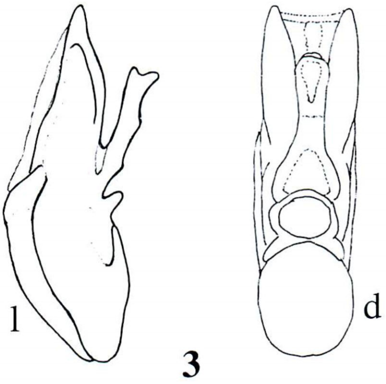
Abdomen slightly dilated laterally, widest at 7th segment, with fine and sparse punctures and with a fine and lineolate microsculptures throughout both on tergites and sternites, yellowish pubescence closer on abdomen than on elytra; basal five visible tergites as well as basal five visible sternites each with a short longitudinal carina at base medially; 7th tergite without any thin whity apical seams; 7th stenite widely and shallowly sinuated at apical margin medially and widely depressed before the sinuation to apical end of baso-median carina; 8th sternite semicircularly and rather deeply excised at apical margin medially (Fig. 2), and provided with a elongate horseshoe-shaped depression in front of the exision, the depression somewhat wholly armed with short blackish spines except narrow median line.

Legs moderately long, profemur thickened, and internally with a wide blunt tooth near apical third in both sexes; protibia excised in basal half of inner surface, within the excision there are four or so comb-like transverse rows of setae; mesotibia normal, and extenal long setae of metatibia feeble and hardly perceptible; protarsi widened in both sexes, meso- and metatarsi not so.

Aedeagus symmetric in outline such as those of European *Domene* (s. str.) species, apparently quadri-lobed, composed of a median lobe with a ventral plate and a pair of lateral lobe-like







Figs. 1–3. *Lathrobium kitayamai* sp. nov.—— 1, Habitus; 2, 7th and 8th sernites of male; 3, aedeagus, l: lateral view; d: dorsal view.

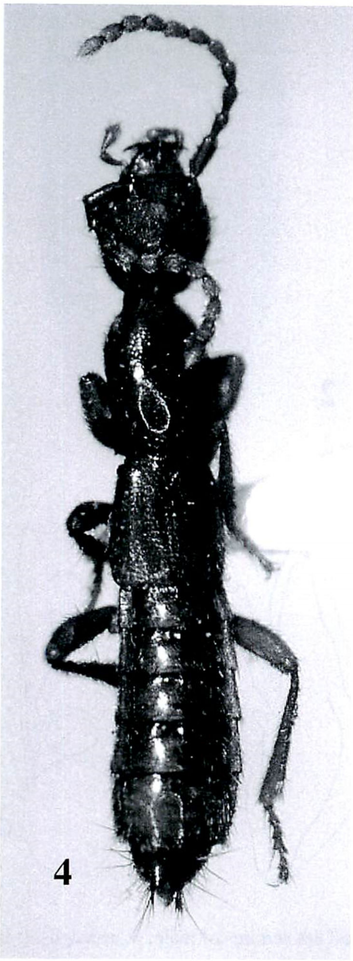
processes, median lobe sclerotized except for dorsal part membranous; ventral plate strongly sclerotized, produced as a long projection, bifurcated up and down at apex, which is somewhat rounded when viewed ventrally; paired lateral lobe-like processes relatively long and slender, slightly passing through the top of median lobe (Fig. 3).

Holotype: ♂, Tobira Spa, Nagano Pref., 22. V. 1999, K. Kitayama leg. (eventually deposited in the Osaka Museum of Natural History). Paratypes: 1♀, same data as holotype; 1♀, same locality, 13–14. V. 2000, K. Kitayama leg.

*Distribution*. Japan (Honshu: Chûbu district).

The present new species is slightly similar to *Lathrobium yozawanum* Watanabe from Tokyo Metr. in general appearance, but is distinctly differentiated from the latter in the body larger, the secondary sexual characters of the male 7th and 8th sternites different in manner and the aedeagus quite different shaped in outline, of which the ventral plate is strongly produced, much longer and the paired lateral processess are slenderer, etc.

*Etymology*. The specific name of this new species is dedicated to Mr. K. Kitayama for his contributions to the specimens for the present study.



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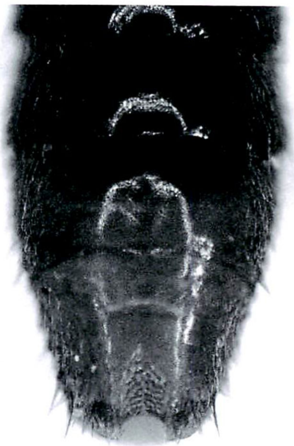

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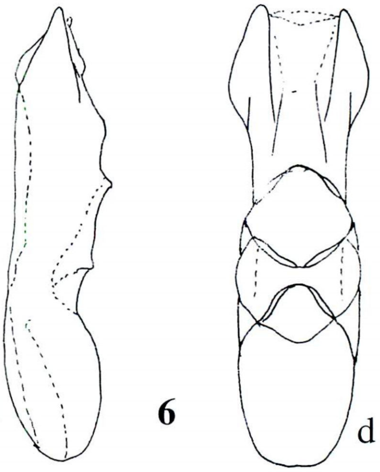

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Figs. 4–6: *Lathrobium daibosatsu* sp. nov. —— 4, habitus; 5, 7th and 8th sernites in male; 6, aedeagus, l: lateral view, d: dorsal view.

## ***Lobrathium daibosatsu*** T. ITO, sp. nov.

(Figs. 4–6)

Body relatively small, subparallel-sided, shining, reddish brown; pronotum, and basal parts of abdominal segments somewhat darker; mouth parts except mandibles, legs and both sides of abdomen paler; pubescence yellow to brown. Length: 5.5 mm (from apical margin of head except labrum and mandibles to anal end).

Head suborbicular, scarcely longer than wide (1.05 : 1.00), widest behind eyes, arcuately convergent to neck; surface covered with close and rather coarse setiferous punctures except for frons sparse, throughout with a perceptible microsculpture except for impunctate clypeofrontal area; eyes extremely small, hardly visible when viewed from above; antennae elongate, extending beyond the basal margin of pronotum, basal two segments polished and 3rd to 11th dull, slightly thickened disatad, all segments distinctly longer than wide, 1st one large and robust, more than twice as long as wide, 2nd short and about half length of the preceding one, 3rd long and nearly

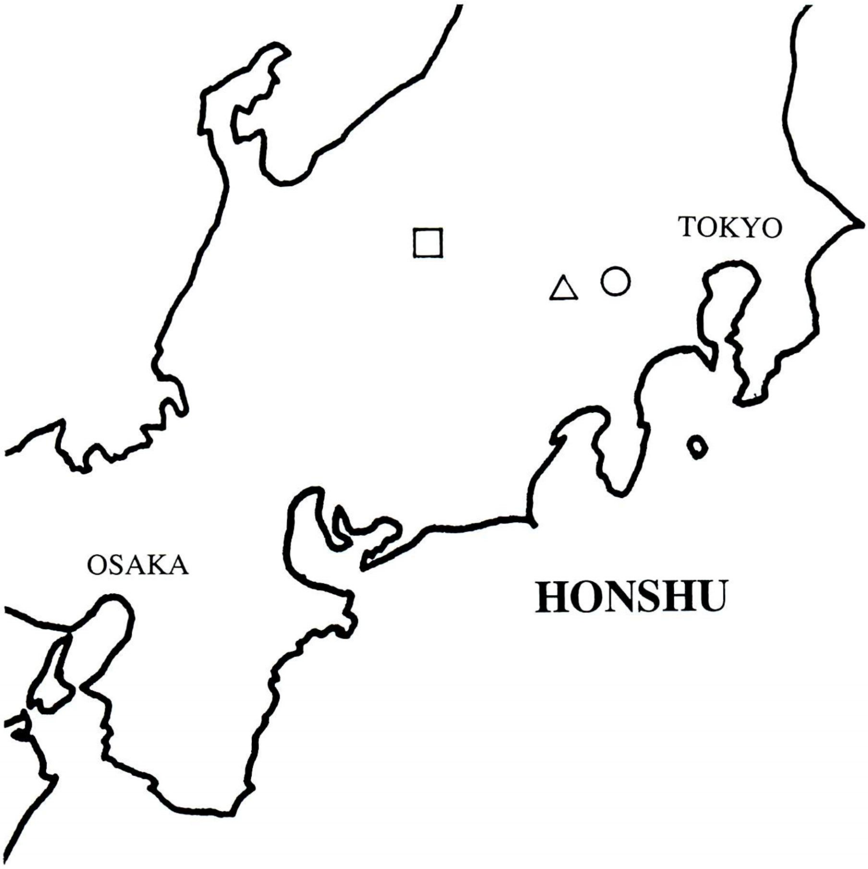

Fig. 7: Distributional map of the *yozawanum* species group in Japan.—— □: *Lathrobium kitayamai* sp. nov.; △: *Lathrobium daibosatsu* sp. nov.; ○: *Lathrobium yozawanum* WATANABE

twice as long as wide, from which to 10th decreases in length and scarcely increases in width, 9th subequal to 10th both in length and width, 11th as wide as and longer than 10th.

Pronotum oblong, longer than wide (1.30 : 1.00) and longer (1.15 : 1.00) and narrower (1.00 : 1.08) than head, coarsely and rather sparsely punctate except for median longitudinal line which is rather wide and smooth, without any microsuclptures; the punctures sparser and coarser than on head at basal half area; apico-lateral margins inclusively at corners invisible from above, but thick throughout as well as both apical and basal margins. Scutellum triangular and clearly punctate.

Elytra slightly widened apicad, longer (at shoulders) than wide (1.10 : 1.00), scarcely shorter (1.00: 1.03) and wider than pronotum (1.16 : 1.00), coarsely and sparsely punctate, uniformly pubescent, and with a hardly perceptible microsculpture. Wings degenerated to a minute lobe.

Abdomen slightly dilated laterally, widest at 7th segment, with fine and sparse punctures and with a fine and lineolate microsculpture throughout both on tergites and sternites, abdominal yellowish pubescence closer than on elytra; basal five visible tergites and sternites each with a short longitudinal carina at the middle of base; 7th tergite bearing no thin whity seam at apical margin; 7th stenite shallowly sinuated at middle of apical margin and widely and shallowly depressed before the sinuation whose bottom hardly processed backward rather than straight; 8th sternite semicircularly and rather deeply excised at apical margin in the middle (Fig. 5), and provided with a horseshoe-shaped depression in front of the exision, the depression sparsely armed with short blackish spines.

Legs moderate in length, similar to the preceding species in male.

Aedeagus symmetrical in shape, trilobed , moderately sclerotized ventrally and membranous dorsally; ventral plate short, subtruncate at apex which is ill-defined in outline; lateral lobe-like processes, seemingly wide and robust when viewed from ventral side, slightly passing through the top of median lobe (Fig. 6).

Female unknown.

Holotype: ♂, Daibosatsu-toge, Yamanashi Pref., 23. VI. 1985, M. TAO leg. (eventually deposited in the Osaka Museum of Natural History).

*Distribution*. Japan (Honshu: Kanto district).

Though the present new species is closely allied to *L. yozawanum* WATANABE at a glance, it is distinguished from the latter by the different shape of aedeagus with the lateral lobes more robust, less convergent backwards in outline of dorsal view, the ventral plate less projected dorsally at tip; in male the 7th sternal sinuation scarcely bisinuate near the bottom, the 8th sternite a little more deeply excised at apical margin.

*Etymology*. The specific name of this new species is given after Mts. Daibosatsu-rei which is the type locality of the present species.

## ***Lathrobium yozawanum*** WATANABE

*Lathrobium yozawanum* WATANABE, 1980, J. speleol. Soc. Japan, 5: 24.

All the specimens of the type series were taken in Yozawa-do Cave, Kamiyozawa, Itsukaichi-cho, Tokyo Metr.

## 要約

伊藤 建夫：日本産ハネカクシ類覚え書き，14．日本産ナガハネカクシ (*Lathrobium*) の２新種. ——— 複眼の退化したコバネナガハネカクシの２新種を記載し，この属に *yozawanum* 種群を設けた．この種群の特徴は眼と後翅が共に退化し，腹節基部に短い竜骨を有し，頭部後部が拡張せず，また雄交尾器が左右対称であることなどである．併せて，この種群の日本産３種の分布図を示した．

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*Entomological Review of Japan*, **64** (1): 33–36, July 30, 2009

# Notes on the Species of Staphylinidae (Coleoptera) from Japan XV. The Description of a New Species of *Lobrathium* MULSANT et REY

Tateo ITO

E12-102, Otokoyama Yutoku 7, Yawata, Kyoto, 614-8371 Japan
E-mail: itokyoto@gb3.so-net.ne.jp

**Abstract** A new species of the genus *Lobrathium* is described under the name of *L. isamutanakai* sp. nov. from Osaka Pref.

I have listed the ten several Lobrathium-species so far, and this time I add a species more which is allied to *L. cribricolle* (SHARP) from Japan.

Before going further I would like to express my cordial thanks to Mr. Isamu TANAKA (Nishinomiya City, Hyogo Prefecture) for his kindly offering me the valuable materials used in the present paper.

## *Lobrathium isamutanakai* sp. nov.

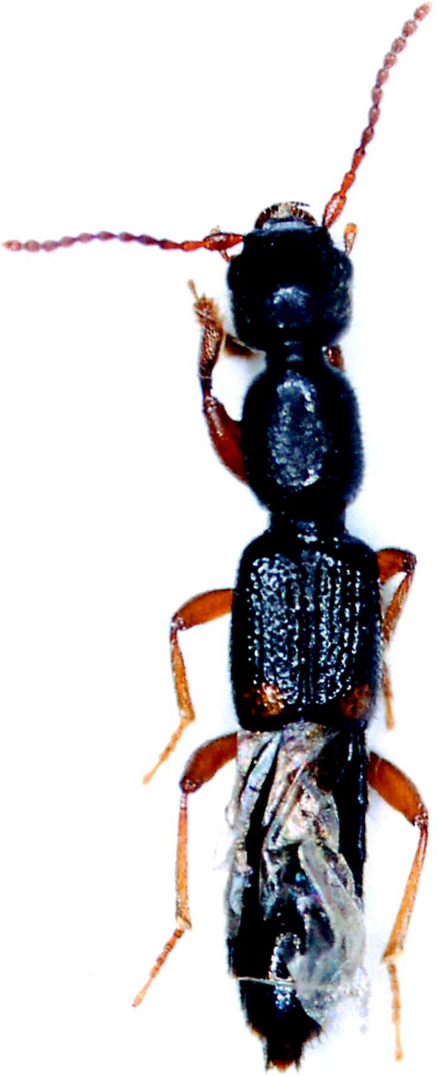
(Figs. 1–3)

Body relatively small, subcylindrical, a little shiny, black; each elytron with a small yellow spot in apico-lateral area; mandibles, basal segments of antennae and femora reddish brown; labrum darkened, maxillary and labial palpi, apical segments of antennae, tibiae and tarsi reddish yellow to brown; pubescence on body dark brownish black to black, those on appendices yellowish brown to dark brown.

Length: 5.3 mm.

Head subquadrate, almost as long as wide, coarsely and deeply punctate except for frons apparently sparsely punctate; the punctures umbilicate, considerably coarser and sparser on vertex than on postgenae; clypeus impunctate; eyes moderately sized, longitudinal diameter nearly equal to a half of length of postgena; postgenae subparallel-sided and widely angulate toward neck; antennae moniliform, robust, slightly incrassate distad, rather long and passing over the middle of pronotum, all segments distinctly longer than wide, 1st segment largest, very robust and more than 1.5 times as long as 2nd which is a little shorter than 3rd, 4th to 6th segments each shorter than the following one, 7th to 10th subequal in length to each other, 11th conical and distinctly longer than 10th. Ventral surface of head coarsely and rather sparsely punctate; the punctures also umbilicate and becoming sparser laterad, both sides of mentum clearly depressed, submentum coarsened, gular plate smooth, gular sutures fairly separated and subparallel.

Pronotum ovate (length/width = 1.22), longer (1.21 : 1) and scarcely narrower (0.99 : 1) than



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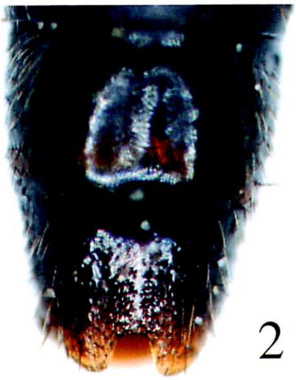

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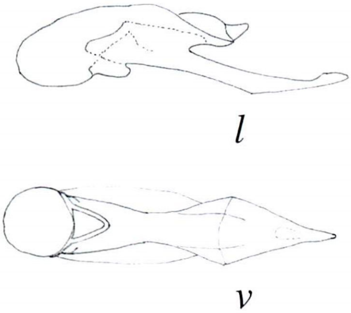

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Figs. 1–3. —— 1. *Lobrathium isamutanakai* sp. nov. 2 The male 7th and 8th sternites of *Lobrathium isamutanakai* sp nov. 3. The aedeagus of *Lobrathium isamutanakai* sp. nov. —— *l*: in lateral view; *v*: in ventral view.

head, subparallel-sided, feebly narrowed behind, coarsely, closely and somewhat irregularly punctate in arrangement, the punctures evidently coarser and a little sparser than on head; vestigial median line short, placed only near base and in front, slightly depressed at sides, lateral margins invisible when viewed from above but thick throughout as well as both apical and basal margins.

Elytra longitudinally oblong, subparallel at sides, hardly widened apicad, wider (1.25 : 1) and longer (1.30 : 1) than pronotum, ratio of length at shoulders to width at the widest point near apex about 1.25; surface with punctures much coarser than on pronotum, arranged in somewhat irregular rows, especially disarranged by rugosities near suture and becoming a little finer laterad in size; pleural margins fairly thick, pleural keels moderately observable except both extremities, each elytral spot small, a little transversely oval in shape, located at apico-lateral area of elytron, not reaching both apical and lateral margins, the shorter diameter of spot about one-fifth as long as elytral length. Wings well developed and functional. Scutellum distinctly and rather finely punctate. Prosternum wholly coarsened, mesosternum also uneven and metasternum finely and sparsely punctate.

Abdomen slightly expanded laterad, increasing in width gently toward 7th segment, then decreasing in width rather rapidly toward the apicalmost segment; all segments scarcely microsculptured; each base of tergites with punctures coarse, obsolete and becoming finer and sparser posteriad, those on each sternite coarser than on the opposite tergite. In male, 4th to 8th sternites depressed along the middle respectively as follows: 4th-sternal depression very feeble or not observable, 5th-sternal one weak, 6th-sternal one moderate, 7th-sternal depression deep, wide, U-shaped and with closer punctures than on outsides except a narrow, triangular and impunctate space along the middle, apical margin of 7th sternite faintly bisinuate in middle, 8th-sternal depression wide and parallel at sides, divided on the base and a apical part, in which the basal part is almost impunctate, the apical one bears fine black peg-like spines except for median space very narrow and smooth, the excision widely oblong in outline (Fig.2).

Legs with profemora very robust and protarsi usually dilated in male.

Aedeagus moderately sclerotized except dorsal side, with a ventral projection heavily sclerotized, lanceolate in shape, slightly narrowed at basal fourth, widest at apical two-fifths, dorsally bent at the widest point, from which sub-straightly narrowed apically in width and more rapidly so near apex, not pointed at the tip, when viewed from lateral sides slender and somewhat thickened at apex (Fig. 3).

*Female*. Unknown.

*Holotype*. ♂, Minase, Mishima, Osaka Pref., 5. IV. 2005, I. TANAKA leg. (will be deposited in the Osaka Museum of Natural History).

*Distribution*. Japan (Honshu: Kinki district).

*Affinity*. Although the present species is closely related to *Lobrathium cribricolle* (SHARP) in having the subcylindrical body in shape, the pronotum without a distinct smooth line along the middle, and the elytra apico-laterally with yellow spots; it is distinguishable from the latter by the 6th and 7th sternites more clearly and more deeply depressed along the middle each, the depression of the 8th sternite with basal impunctate part wider and apical part more closely spined; the ventral projection of the aedeagus quite different in shape, such as the lateral sides not evenly convergent from the widest point both towards apex and base, and also less angulated at that point, the apex less thickened on tip in lateral view, and so on.

*Etymology*. The specific name of this new species is given after Mr. Isamu TANAKA who is superior in technique of insect-collecting and is the collector of the present species.

## 要約

伊藤 建夫：日本産ハネカクシ科甲虫の覚書，15・ナガハネカクシ属 (*Lobrathium*)の１新種. ——— キモンナガハネカクシ *Lobrathium cribricolle* (SHARP) に近似の１新種，タナカキモンナガハネカクシ *Lobrathium isamutanakai* sp. nov. を記載命名し，雄第７・８腹板と雄交尾器を図示した.

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*Entomological Review of Japan*, **64** (1): 37–39, June 30, 2009

# Discovery of the Male of *Strongylium tanakai* ANDO (Coleoptera: Tenebrionidae)

Kiyoshi ANDO*
Entomological Laboratory, Faculty of Agriculture, Ehime University,
5–7, Tarumi 3-chome, Matsuyama, 790–8566 Japan

and

Naoyuki NAKAHAMA
1–4, Yamano-chô, Kashiwara City, Osaka 582–0010 Japan

**Abstract** The male features of *Strongylium tanakai* ANDO, 2003, is described for the first time based on the specimens collected on Iwai-jima Is., Yamaguchi Pref.

*Strongylium tanakai* ANDO, 2003 was described originally from Awaji-shima, Japan based on two female specimens, and no information of the male had been brought until now. On March, 2009, the junior author, NAKAHAMA, discovered some male specimens of this species from the small island Iwai-jima in Yamaguchi Prefecture, Japan. This island is about 280 km distant from the type locality, Awaji-shima, but both islands are included in the same territory of the Seto Inland Sea.

These specimens were collected under a bark of tree or by sifting leaf litter in a evergreen broad-leaved forest about 100 m distant from seaside.

We will describe herein the features of the first known male of *S. tanakai*, with illustrations of its habitus and genitalia.

Before going further, we are much indebted to the following people for their permission to make use of their specimens in this study: Shotaro KAKIZOE, Nagasaki and Takahiro YOSHIDA, Hyôgo.

## ***Strongylium tanakai*** ANDO, 2003

(Figs. 1–2)

*Strongylium tanakai* ANDO, 2003, 58: 79, figs. 1–2.

*Specimens examined*: 2♂♂, Iwai-jima, Kaminoseki-chô, Yamaguchi, Japan, 12. III. 2009, N. NAKAHAMA leg.; 1♂, ditto, 12. III. 2009, S. KAKIZOE leg.; 1♂, ditto, 12. III. 2009, T.

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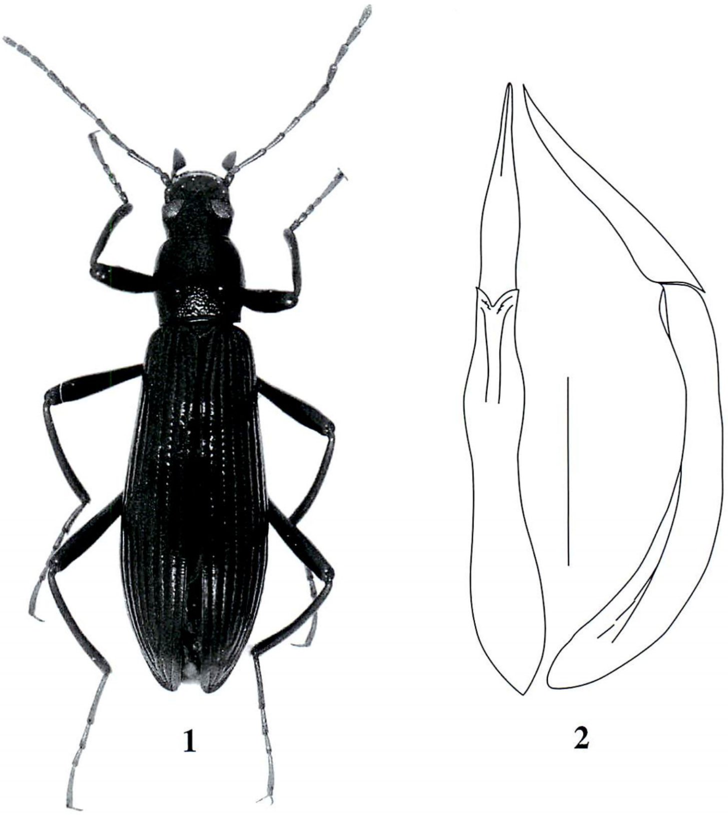
* This is the "Contribution to the knowledge of Japanese Tenebrionidae (6)" of the senior author.



Figs. 1–2. *Strongylium tanakai* ANDO, ♂; 1, Habitus in dosal view; 2, male genitalia, left: dorsal view, right: lateral view. (Photo by Yûji KATAYAMA). Scale: 1 mm.

YOSHIDA leg.

Male. Length: 10.4–11.5 mm; width: 2.8–3.3 mm.

Body entirely cucumiform.

Head with the narrowest point of frons about 1.25 times as wide as transverse diameter of an eye; mentum not depressed, longitudinally raised along the middle, more or less depressed at sides, sparsely pubescent on coarse surface; distal four segments of antennae longer and more robust than those of female, terminal segment entirely elongate.

Pronotum widest at middle, 1.09 times as wide as long, with a pair of distinct impressions behind the middle; punctures coarser. Scutellum larger, right-angled triangular.

Elytra more slender than those of female, about 2.71 times as long as wide, very narrow and almost parallel in basal third, thence strongly tumid to apices; disc distinctly depressed behind base between 2nd and 5th intervals; intervals more convex than those of female, 6th to 8th intervals at humerus connected with one another and strongly raised; apices dehiscent, each rounded. Hind wings entirely lack instead of micropterous in female.

Ventral side much more strongly and distinctly microsculptured; abdominal sternites more densely covered with setigerous punctures, fifth visible sternite distinctly and triangularly depressed at apex.

Male genitalia (Fig. 2) slender and long, about 0.45 times of elytral length; parameres ensiform in lateral view.

Legs normally without secondary sexual characteristics, reddish brown except for each apical portion of femora in a specimen; tibiae weakly incurved, protibiae rather distinctly incurved in apical half; LM = ca. 21 : 11 : 7 : 17.

*Notes*. In comparison to the male of *S. impigrum* Lewis, the triangular depression of anal sternite which shows a external sexual dimorphism is quite similar, but *S. tanakai* has the antennal segments which are more robust, shorter, and more dilated apicad; legs shorter and more robust, tibiae weakly incurved, and protibiae distinctly incurved instead of entirely straight in *S. impigrum*.

## 要約

安藤 清志・中浜 直之：アワジハネナシキマワリ雄個体の発見．――――本邦に産する，後翅が退化したアワジハネナシキマワリ *Strongylium tanakai* Ando, 2003は当初2雌のみで記載され，その後の探索にも拘わらず，今日に至るまで雄の存在が確認されなかった．本年(2009)の3月になって，著者のひとり中浜および柿添翔太郎，吉田貴大らの各氏により，山口県熊毛郡上関町祝島の照葉樹林内で本種の雄が発見された．祝島は模式標本が採集された瀬戸内海に属するものの，その産地からは約280 kmの距離的隔たりがある．精査の結果，本種の外部二次性徴は比較的軽微なものであったが，雄の特徴を簡潔に記載し，全形図と交尾器を示した．

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# Description of Larva of *Dryopomorphus yaku* YOSHITOMI et SATÔ with Distributional and Ecological Notes on the Japanese Members of the Genus *Dryopomorphus* HINTON (Coleoptera: Elmidae)

Masakazu HAYASHI

Hoshizaki Green Foundation, Okinoshima, Sono, Izumo, 691–0076 Japan

**Abstract** Larva of *Dryopomorphus yaku* YOSHITOMI et SATÔ from Yakushima Is. is descried. Larva of *D. yaku* resembles that of *D. amami* in external morphology including microstructure on body surface.

**Key words**: Coleoptera, *Dryopomorphus yaku*, Elmidae, larva

Larva of the Japanese Elmidae has been poorly known. GOSE (1955, 1956) reported many taxa of aquatic larvae in "Dryopidae", but these larvae are apparently a mixture of several families as reported on Psephenidae (LEE *et al.*, 2001; HAYASHI, 2007a), on Elmidae (YOSHITOMI and SATÔ, 2005) and on Ptilodactylidae (HAYASHI, 2007a), and the most of Elmidae have not been identified owing to the lack of important characters such as labrum, labium, prosternum and surface setae in his descriptions.

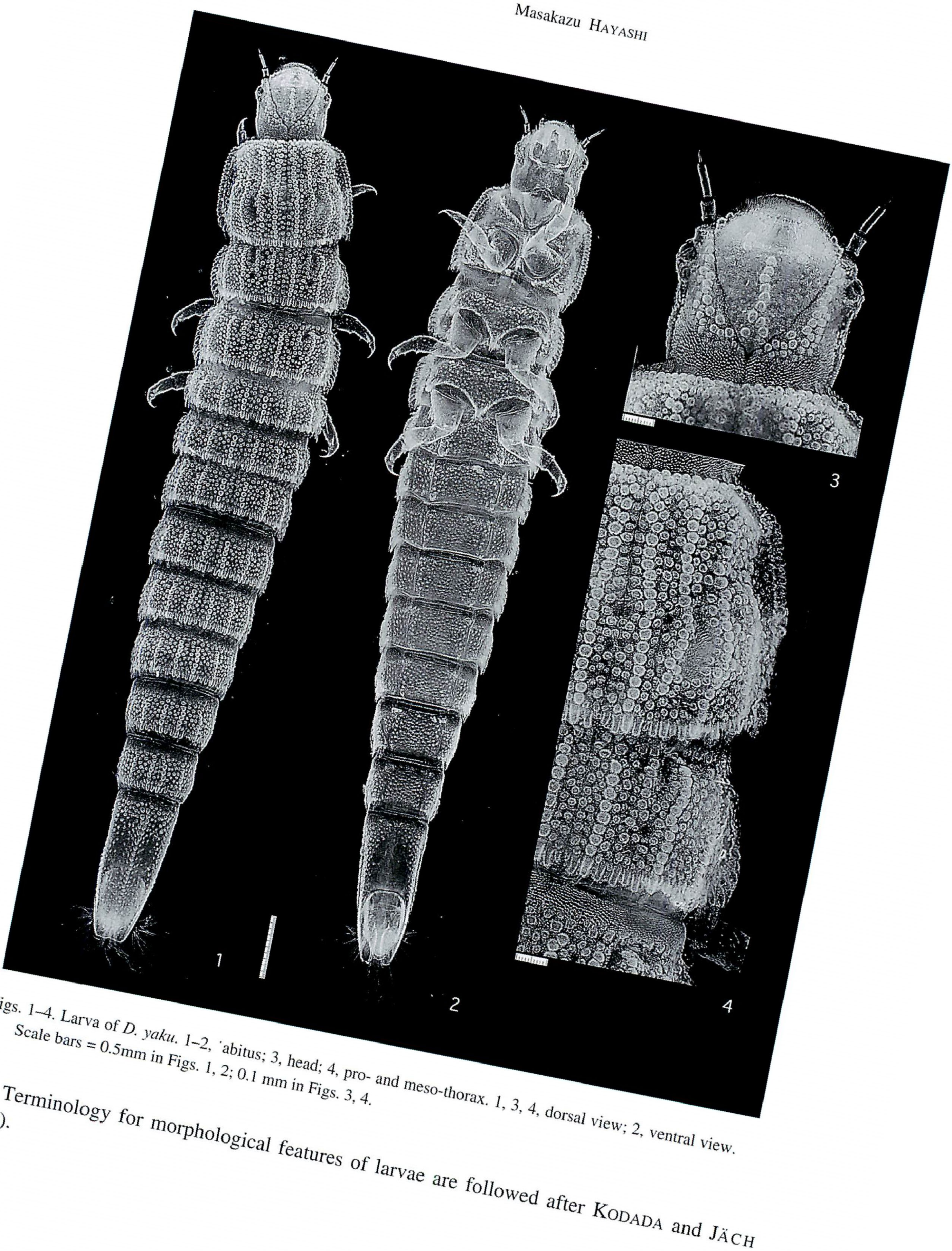
In the recent revision of the genus *Drypomorphus* of Japan, four species in all were treated with descriptions of two new species, *D. yaku* and *D. amami* (YOSHITOMI and SATÔ, 2005) and three species of larvae other than *D. yaku*.

In this paper, the larva of *D. yaku* is described for the first time from together with the additional records and ecological notes on the other species of the genus *Dryopomorphus* of Japan.

## Methods and Materials

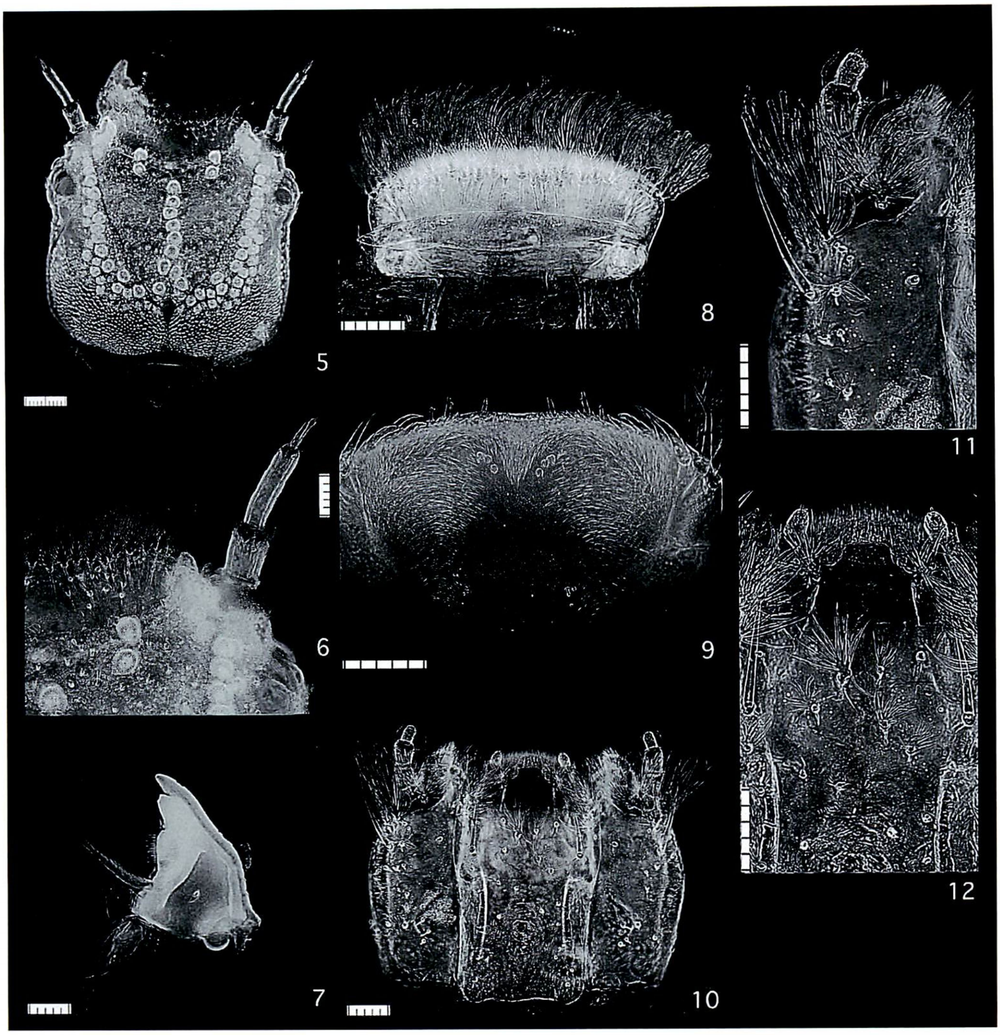
Larvae were collected from one site on Yakushima Is., Kagoshima Prefecture, Japan. The larvae were fixed in 70% ethanol, and were deposited at the Hoshizaki Institute of Wildlife Protection, Izumo, Shimane Prefecture, Japan.

Larva was examined and photographed for the external structure under a light microscope, Nikon Eclipse E600 with Nikon CoolPix Microsystem 8. However, the focus depth of the microscope is very shallow and the most part of a photograph is out of focus. In this study, about 10 to 30 digital photographs are composed with an extended depth of field by Kenis Photo Measure for Windows and the image processing is made by Adobe Photophop Elements 6 for Macintosh. The larval specimens are prepared for observation after taking ultrasonic cleaning (25°C, 10–15 minutes) and soaking in 5% KOH solution (25°C, 1 day or more days).



Figs. 1–4. Larva of *D. yaku*. 1–2, habitus; 3, head; 4, pro- and meso-thorax. 1, 3, 4, dorsal view; 2, ventral view. Scale bars = 0.5mm in Figs. 1, 2; 0.1 mm in Figs. 3, 4.

Terminology for morphological features of larvae are followed after KODADA and JÄCH (2005).



Figs. 5–12. Larva of *D. yaku*. 5, Head; 6, antenna and clypeus; 7, right mandible; 8, labrum; 9, epipharynx; 10, maxilla and labium (maxillolabial unit); 11, maxilla; 12, labium. Scale bars = 0.1 mm in Fig. 5; 0.05 mm in others.

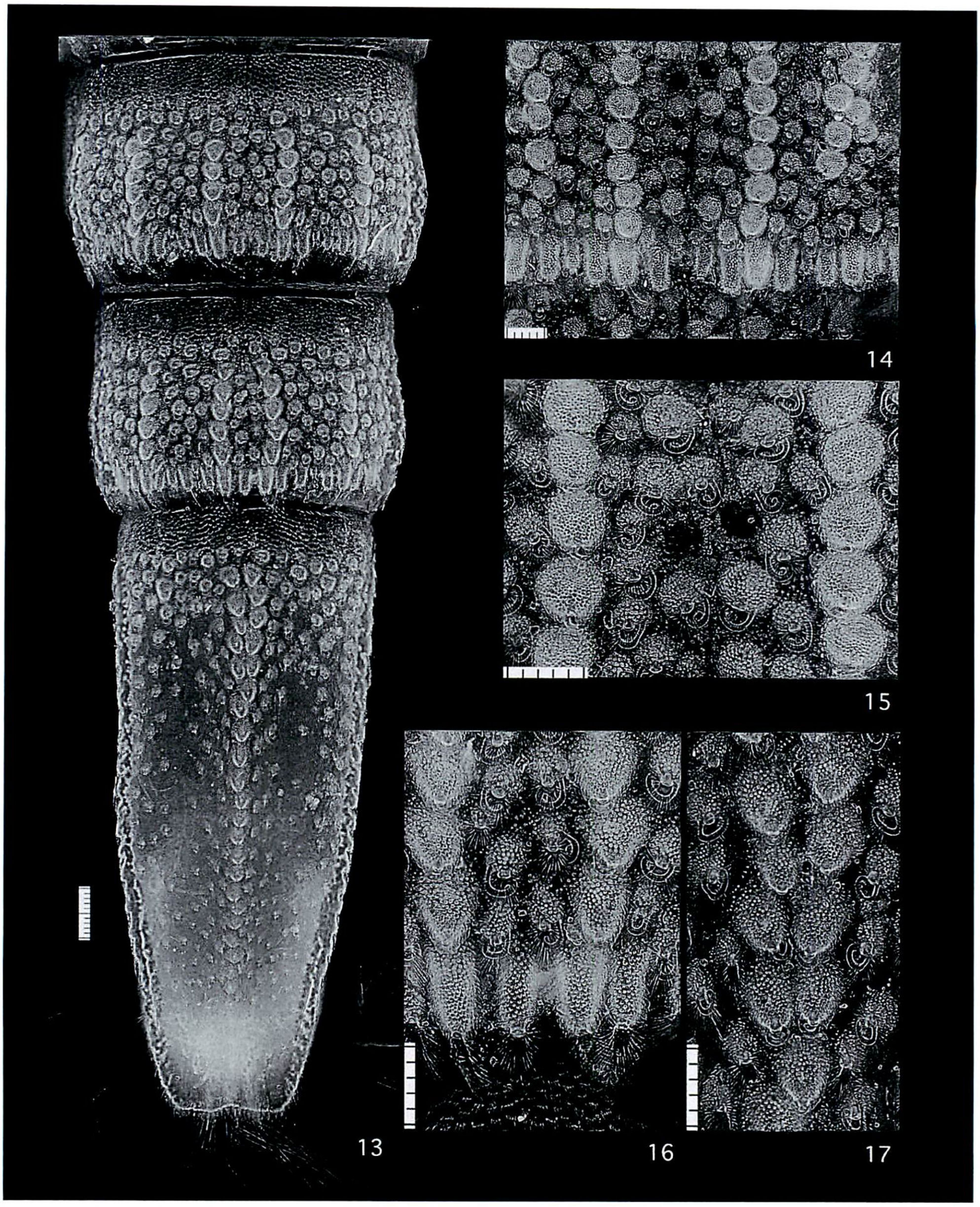
## Description of Larva

### *Dryopomorphus yaku* YOSHITOMI et SATÔ , 2005

(Figs. 1–31)

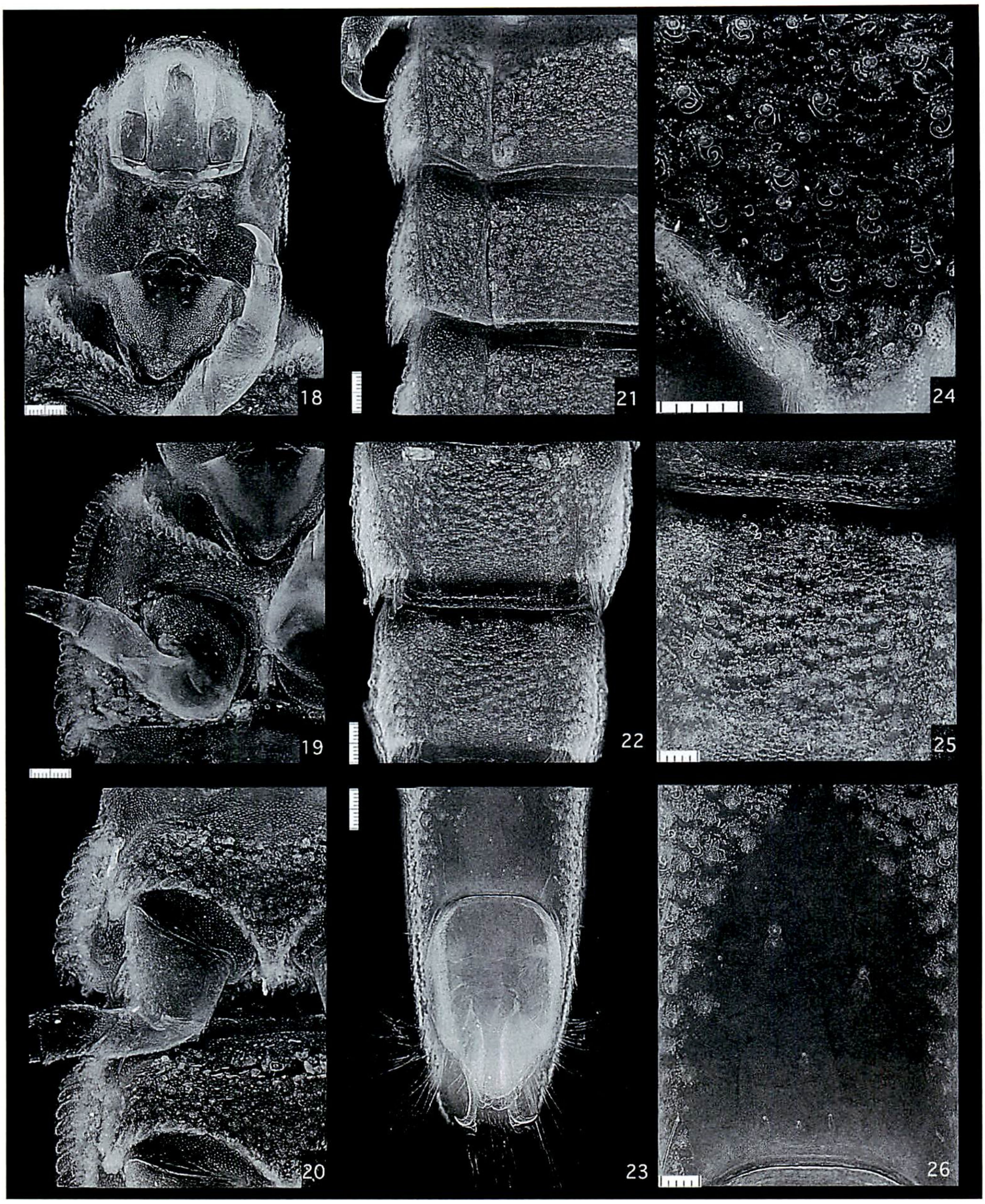
Body (Figs. 1, 2) elongate, thorax broad and abdomen gradually narrowing to apex from dorsal view; most segments convex dorsally and flattened ventrally; body color entirely brown or creamy.

Head (Figs. 3, 5) visible from above; width as long as length; frontal tooth present; clypeus transverse, with dense long setae on frontal margin; frons with 15 to 18 granules: a strial coarse granules on middle and a pair of two granules on front area side by side; vertex with coarse



Figs. 13–17. Larva of *D. yaku* (dorsal parts). 13, Abdominal segments VII to IX; 14, basal area of prothrax; glabrous spots on central disc of prothrax; 16, apical area of segment VIII; 17, basal-middle area of segment IX. Scale bars = 0.1 mm in Fig. 13; 0.05 mm in others.

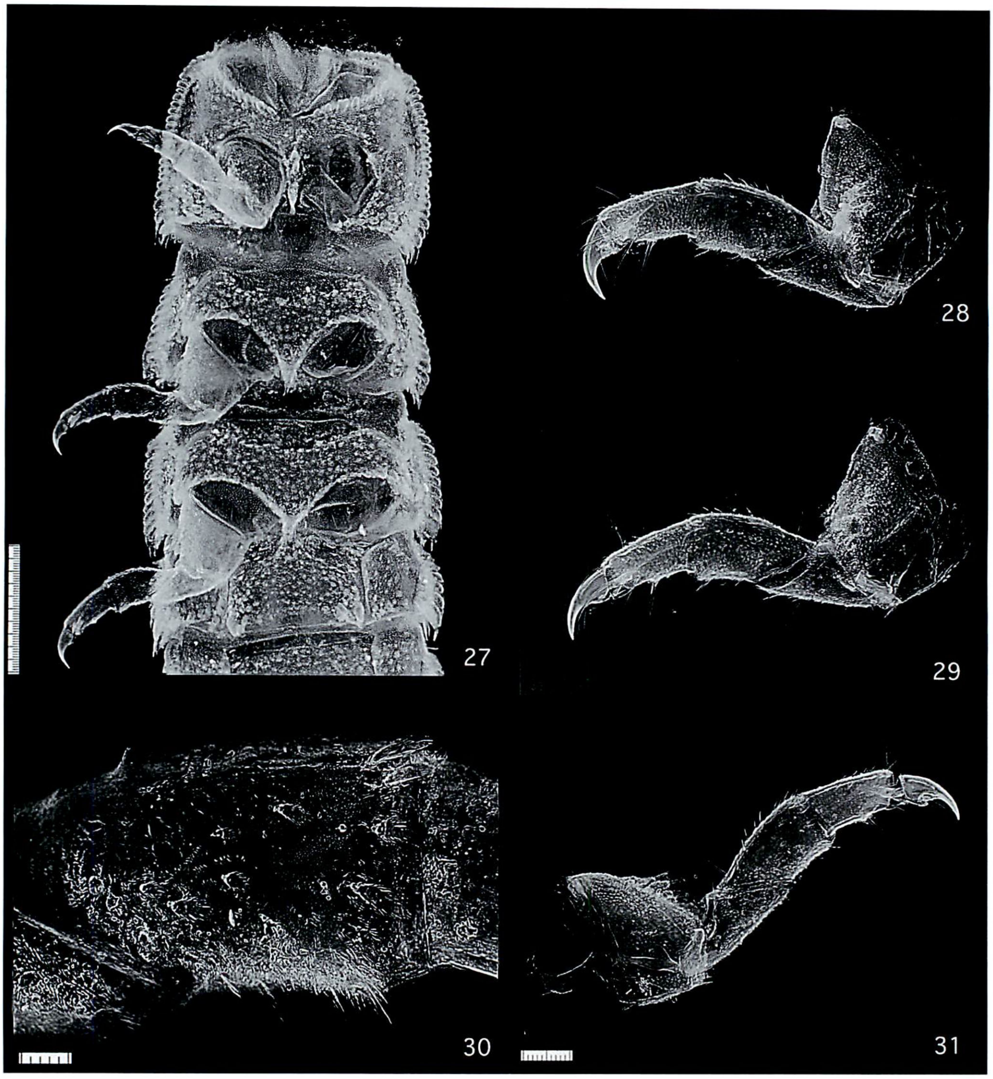
granules along frontal arms; posteriole edge slightly emarginate; epicranial stem present and contiguous at base (Fig. 5); frontoclypeal suture indistinct. Antenna (Fig. 6) 3-segmented; 1st shorter than 2nd; 2nd with sensorial appendage; 3rd slender. Labrum (Fig. 8) transverse and short, with dense long setae along frontal margin. Mandible (Fig. 8) tridentate at apex, bearing brushes and hairs in inner margin of ventral surface, with articulated pubescent process in inner-middle margin of dorsal surface. Maxilla and labium (Figs. 10–12) forming unit (maxillolabial



Figs. 18–26. Larva of *D. yaku* (ventral parts). 18, Head; 19, prosternum; 20, meso- and meta-sternum; 21, abdominal segments II to IV; 22, abdominal segments VII to VIII; 23, abdominal segment IX (terminal segment); 24, surface of metasternum; 25, surface of segment VIII; 26, surface of segment IX (basal area). Scale bars = 0.1 mm in Figs. 18–23; 0.05 mm in Figs. 24–26.

unit). Maxilla with 4-segmented palpus (Fig. 11); cardo small; stipes large; galea and lacinia separate, setose apically. Labium narrow with short 2-segmented palpus (Fig. 12); ligula short and tansverse; mentum long; submentum short and tansverse.

Thorax serrated on lateral sides; entirely granulate on dorsum with 8 coarse strial granules; granules with plastron setae and spiral-shaped setae (Fig. 15); middle groove present. Prothorax



Figs. 27–31. Larva of *D. yaku*. 27, Ventral view of thorax; 28, left fore-leg; 29, left middle-leg; 30, 31, left hind-leg (30, surface of 3rd segment). Scale bars = 0.5 mm in Fig. 27; 0.05 mm in Fig. 30; 0.1 mm in Figs. 28, 29, 31.

two times as long as mesothrax; glabrous area on middle and lateral-basal part (Fig. 4); with 7 ventral sclerites, one sclerite between coxae narrow; distinct sclerite of hind coxae absent. Mesothorax and metathorax transeverse. Legs (Figs. 28–31) 5-segmented, short and stout; last segment terminates in a single claw.

Abdomen 9-segmented (Figs. 1, 2). First eight segments (segment I to VIII) transverse with 6 striae of coarse granules. Last segment (segment IX: Fig. 13) elongate; apical margin slightly emarginate; ventral operculum, opercular claws, and anal gills present (Fig. 23).

Body length: ca. 7.0 mm (expanded specimen in 70% ethanol).

Comparisons: Larva of *D. yaku* resembles that of *D. amami* in external characters including microstructure on body surface. The number of granules on frons differs from each other but the number of them is variable: 15–18 (mean 16.5, n=11) in *D. yaku*; 17–20 (mean 18.3, n=11) in *D. amami*.

Specimens of larva examined: 11 exs., Shiratani, near Miyanoura, Yaku-shima, Kagoshima Preferctute, Japan, 12. VII. 2007, M. HAYASHI leg. 1 ex., ditto, 27. IV. 2008, M. HAYASHI leg.

## Key to Larvae of Japanese Species

New key to species of the Japanese *Dryopomorphus* is given. Most characters using in this key are followed by YOSHITOMI and SATÔ (2005).

1. Frons with scattered granules; lateral margin of thorax slightly serrated ·································· 2
— Frons with strial granules on middle (Fig. 5); lateral margin of thorax strongly serrated ······· 3
2. Last abdominal segment (segment IX) with a pair of spines at apex ········*D. extraneus* HINTON
— Last abdominal segment without a pair of spine, but apex emarginate at apex ·························
································································································*D. nakanei* NOMURA
3. Distributed in Aami-Ôshima Is.; frons with 17 to 20 granules ·· *D. amami* YOSHITOMI et SATÔ
— Distributed in Yakushima and Tanegashima Iss.; frons with 15 to 18 granules ·························
································································································ *D. yaku* YOSHITOMI et SATÔ

## Notes on the Japanese Species of *Dryopomorphus*

Distribution maps of the Japanese four species are shown in Fig. 32. The asterisk on prefecture shows records by YOSHITOMI and SATÔ (2005).

### *Dryopomorphus extraneus* HINTON

Distribution. Japan: Honshû, Shikoku, Kyûshû.

Records. [Honshû]: Fukushima Pref. (ÔSHIO, 2008); Tochigi Pref. (SATOH and OHMOMO, 2003); Kanagawa Pref. (MORIYA, 1997); *Nagano Pref.; *Aichi Pref.; *Gifu Pref.; *Wakayama Pref.; *Nara Pref.; Osaka Pref. (SHIYAKE *et al.*, 2008); *Hyogo Pref. (FUJIWARA, 2009); *Okayama Pref.; Hiroshima Pref. (AKIYAMA, 2008); Tottori Pref. (HAYASHI and KADOWAKI, 2007, 2008); Shimane Pref. (HAYASHI and SHIMADA, 2006; HAYASHI, 2007b, 2008, 2009b). [Shikoku]: *Ehime Pref.; *Tokushima Pref. [Kyûshû]: *Kumamoto Pref.; *Fukuoka Pref. (OGATA and NAKAJIMA, 2006); *Ôita Pref.

*Ecological notes.* The adults and larvae are found from waterlogged wood on mountain stream in all seasons (YOSHITOMI and SATÔ, 2005; HAYASHI, 2007b). The adults pass the winter under large stone in the running water (HAYASHI, 2007b). This species is not rare in mountain area of Shimane and Tottori Prefectures, western Japan.

### *Dryopomorphus nakanei* NOMURA

Distribution. Japan: Honshû, Shikoku.

Records. [Honshû]: Fukushima Pref. (MIZUNOYA and YOSHII, 2008); Tochigi Pref. (SATOH and OHMOMO, 2003); *Ibaraki Pref. (TAKANO and OHMOMO, 2000); Kanagawa Pref. (MORIYA,

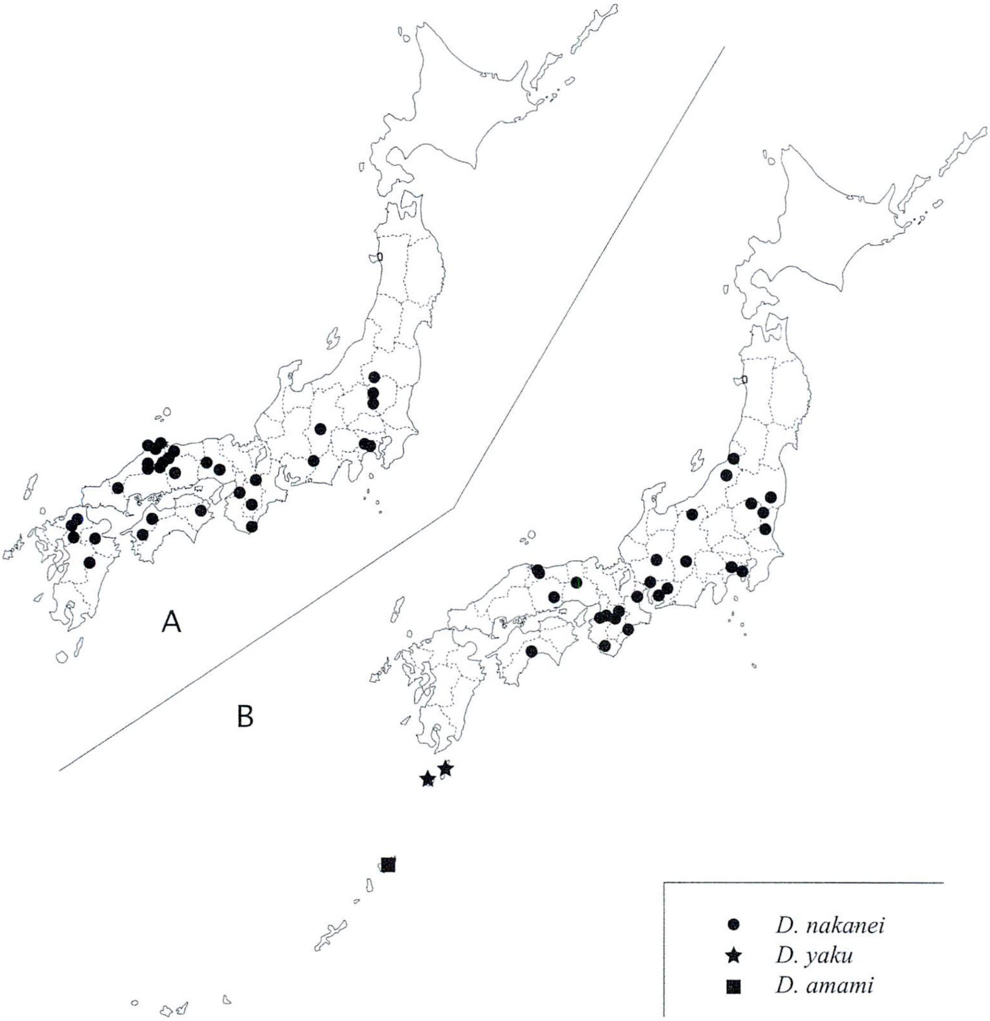


Fig. 32. Distributional map of *Dryopomorphus* spp. in Japan. A, *D. extraneus*; B, *D. nakanei*, *D. yaku* and *D. amami*.

1997); *Niigata Pref. (NOMURA and BABA, 1961); *Nagano Pref. (type locality: NOMURA, 1958); Aichi Pref.; *Gifu Pref.; *Mie Pref. (NOMURA, 1958), *Wakayama Pref.; Osaka Pref. (SHIYAKE *et al.*, 2008); *Hyogo Pref. (FUJIWARA, 2009); *Okayama Pref; Tottori Pref. (HAYASHI and KADOWAKI, 2007, 2008). [Shikoku]: *Kochi Pref.

*Ecological notes*. HAYASHI and KADOWAKI (2008) reported that the larvae are collected from roots of reed under the running water. It is considered that the larva feeds on not only waterlogged wood but also reed roots. The pupa of this species was obtained by rearing in the laboratory (HAYASHI and KADOWAKI, 2008).

### *Dryopomorphus yaku* YOSHITOMI et SATÔ

*Distribution.* Japan: Yakushima Is., Tanegashima Is.

*Records.* *Kagoshima Pref.: Yakushima Is. (type locality; HAYASHI and FUJIWARA, 2007); Tanegashima Is.

*Ecological notes.* The adults and larvae are found from waterlogged wood in mountain stream (HAYASHI and FUJIWARA, 2007).

### *Dryopomorphus amami* YOSHITOMI et SATÔ

*Distribution.* Japan: Amami-Ôshima Is.

*Records.* *Kagoshima Pref.: Amami-Ôshima Is. (type locality; HAYASHI and FUJIWARA, 2008).

*Ecological notes.* HAYASHI and FUJIWARA (2008) reported that the larvae are collected from roots of reed under the running water. The larval ecology is similar to that of *D. nakanei.*

## Acknowledgements

I thank Dr. Hiroyuki YOSHITOMI for reading my manuscript. Thanks also go to Mr. Jun'ichi FUJIWARA for helping my field survey on Yakushima and Amami-Ôshima Iss.

## 要　　　約

林　成多：ヤクハバビロドロムシ幼虫の記載および日本産ハバビロドロムシ属に関する知見（甲虫目：ヒメドロムシ科）．——— 日本から知られるハバビロドロムシ属4種のうち，幼虫が未記載であったヤクハバビロドロムシ *Dryopomorphus yaku* YOSHITOMI et SATÔ について記載を行った．本種の幼虫はアマミハバビロドロムシ *D. amami* YOSHITOMI et SATÔ の幼虫にきわめてよく似ており，前頭の顆粒の数がアマミハバビロドロムシより少ない傾向があるものの，完全に識別できる特徴は見いだされなかった．このほか，日本産4種に関する最近の知見について簡単にまとめた．

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*Entomological Review of Japan*, **64** (1): 51–65, June 30, 2009

# Taxonomic Notes on the Lycid Beetles (Coleoptera: Lycidae) from Japan, I. Descriptions of Five New Taxa from the Ryukyu Islands, Southwest Japan

Kiyoshi MATSUDA
15–27 Matsugaoka, Hanayashiki, Takarazuka City,
Hyogo Prefecture, 665–0801 Japan

**Abstract** Five new taxa of the Japanese lycid beetles, *Dilophotes matobai* sp. nov., *Macrolycus mikagei* sp. nov., *Cautires okinawensis* sp. nov., *Eropterus ogatai* sp. nov., and *Lyponia* (*Ponyalis*) *oshimana matsumurai* subsp. nov. are described from the Ryukyu Islands, Southwest Japan. A key to the Japanese species of the genus *Eropterus* GREEN, 1951 is provided.

The Japanese lycid fauna has been studied by Japanese and foreign coleopterists since KIESENWETTER (1874). About 110 species of lycid beetles have hitherto been known to occur in Japan. They are currently classified into 4 subfamilies, 10 tribes, 21 genera: Libnetinae, *Libnetis*; Dictyopterinae, Dictyopterini, *Benibotarus*, *Dictyoptera*, *Greenarus*, *Laterialis*, *Punicealis*, *Pyropterus*; Ateliinae, Dilophotini, *Dilophotes*; Lycinae, Conderini, *Conderis*, *Xylobanellus*, Platerodini, *Plateros*, Macrolycini, *Macrolycus*, Lyponiini, *Lyponia*, Lycini, *Lycostomus*, Metriorrhynchini, *Cautires*, *Xylobanus*, Calochromini, *Calochromus*, Erotini, *Eropterus*, *Erotides*, *Lopheros*, *Platycis,* based on a new classification by BOCÁK and BOCÁKOVÁ (2008).

In recent years, new collecting techniques on adult lycid beetles such as Malaise trap, FIT and sweeping leaves and flowers in canopy have led to the discovery of new species in Japan. Last year, the author had an opportunity to examine a series of 372 specimens of lycid beetles collected by Malaise trap and sweeping on many sites in Okinawa-jima Island together with a series of 214 specimens mainly collected by sweeping on the western area in Amami-Ôshima Islands. After the close examination, he found five new taxa among them. In the present paper, the author is going to describe these new taxa, of which two new species, *Cautires okinawensis* sp. nov., *Eropterus ogatai* sp. nov., and one new subspecies, *Lyponia* (*Ponyalis*) *oshimana matsumurai* subsp. nov. inhabit Okinawa-jima Island, and two new species, *Dilophotes matobai* sp. nov., *Macrolycus mikagai* sp. nov. from Amami-Ôshima Island.

*Dilophotes matobai* sp. nov. is the first record of the subfamily Ateliinae KLEINE, 1928 from the Ryukyu Islands, Southwest Japan.

*Depositories.* HUM—Hokkaido University Museum, Sapporo; KUM—Kyushu University Museum, Hakata; URMN—University of the Ryukyus, University Museum, Nishihara; NSMT—National Museum of Nature and Science, Tokyo; CBM—Natural History Museum and Institute, Chiba; OMNH—Osaka Museum of Natural History, Osaka; KCMI—

Kashihara City Museum of Insect; Kashihara; WPMNH—Wakayama Prefectural Museum of Natural History, Kainan; KMC—author's collection.

## Descriptions

### Subfamily Ateliinae KLEINE, 1928

### Tribe Dilophotini KLEINE, 1928

### Genus *Dilophotes* WATERHOUSE, 1879

### ***Dilophotes matobai*** MATSUDA, sp. nov.

(Figs. 1, 6, 11, 16–18)

Male. Body blackish brown, shining, with mandibles and claws yellowish brown; head, pronotum and scutellum black to blackish brown, shining; antennae and legs blackish brown except for 2nd antennal segments somewhat lighter in color; elytra unicolor black.

Body surface closely furnished with short, recumbent, yellowish brown pubescence; head, pronotum, scutellum and legs densely covered with short, recumbent, reddish brown or yellowish brown pubescence; antennae closely covered with short, recumbent, reddish brown pubescence; elytra closely covered with short, recumbent and suberect dark reddish brown pubescence.

Head small, transverse, finely and densely punctured; frons short, strongly deflexed, slightly rounded in front, with a deep longitudinal groove between frontal tubercles, which are strongly swollen just behind antennal insertions; vertex with a shallow longitudinal line in central portion.

Eyes relatively small, lateral, hemispherically prominent; distance between eyes about 1.5 times as wide as eye diameter.

Antennae long, fully exceeding the middle of elytra; 1st segment stout, strongly swollen at apex; 2nd segment cylindrical, about 0.7 times as long as wide; 3rd segment triangular, about 1.3 times as long as the apical width; 3th to 10th segments weakly serrate; 3rd to 7th segments subequal in width; 8th to 10th segments gradually decreasing in width; 11th segment missing; relative lengths of 1st to 10th segments from basal to apical: 0.8 : 0.3 : 1.0 : 1.3 : 1.4 : 1.4 : 1.5 : 1.5 : 1.5 : 1.5.

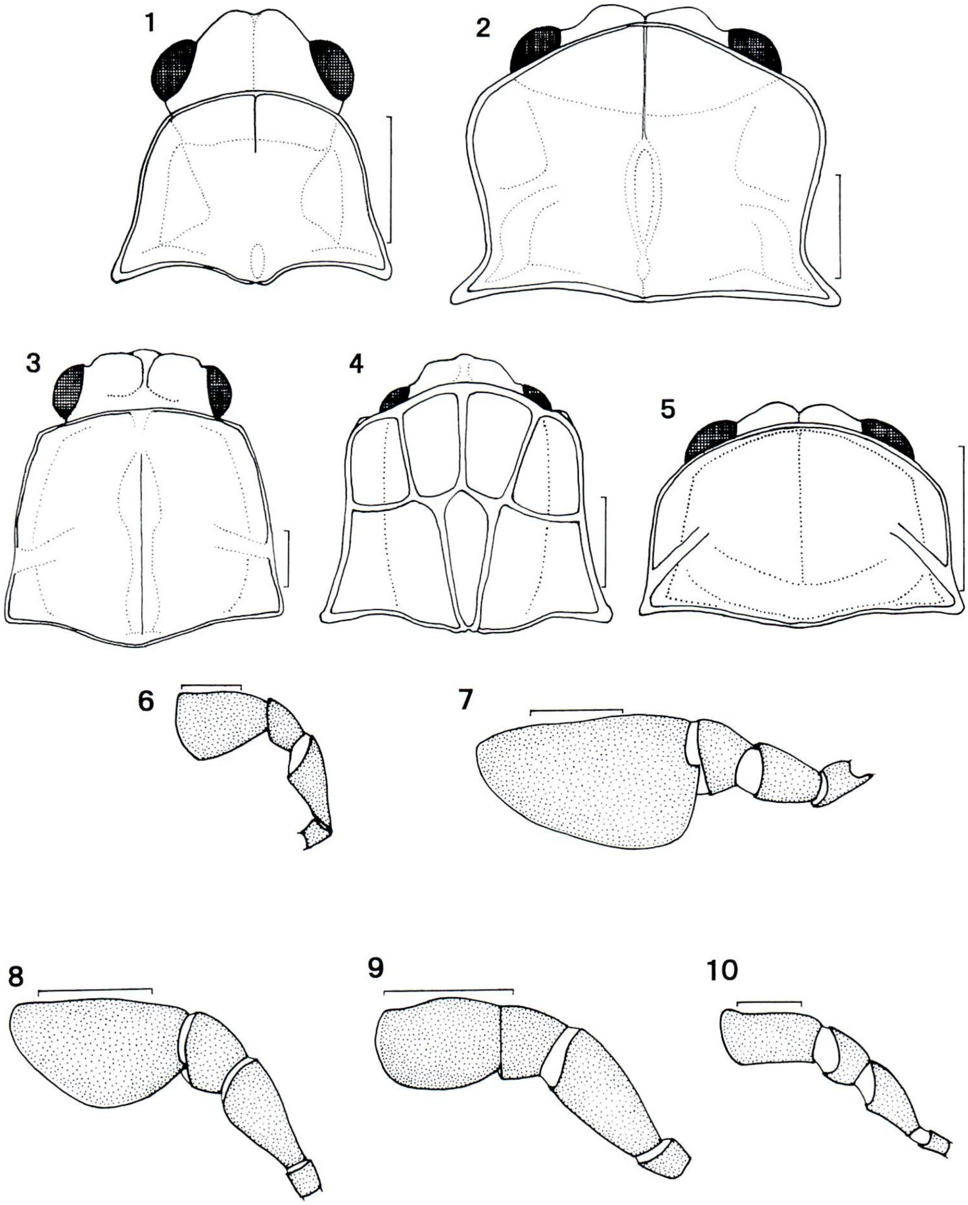
Maxillary pulpi with terminal segment securiform, about 1.3 times as long as wide, slightly longer than 2nd segment.

Labial pulpi with terminal segment subtriangular, about as long as wide.

Prothorax transverse, about 0.7 times as long as the basal width, about 1.3 times as wide as head, and slightly diverging posteriad; anterior margin roundly produced; anterior angles widely rounded; posterior angles triangularly and sharply projecting latero-posteriad; basal margin bisinuate; lateral sides widely reflexed; disc convex, obliquely grooved from each anterior corner to the middle of posterior margin, deeply impressed at each posterior corner, finely and closely punctured on central portion, coarsely punctured just behind anterior margin, provided with a long narrow longitudinal carina in front and a feeble small fovea before the middle of basal margin.

Scutellum trapezoidal, feebly incised at apex; surface minutely and rather densely punctured.

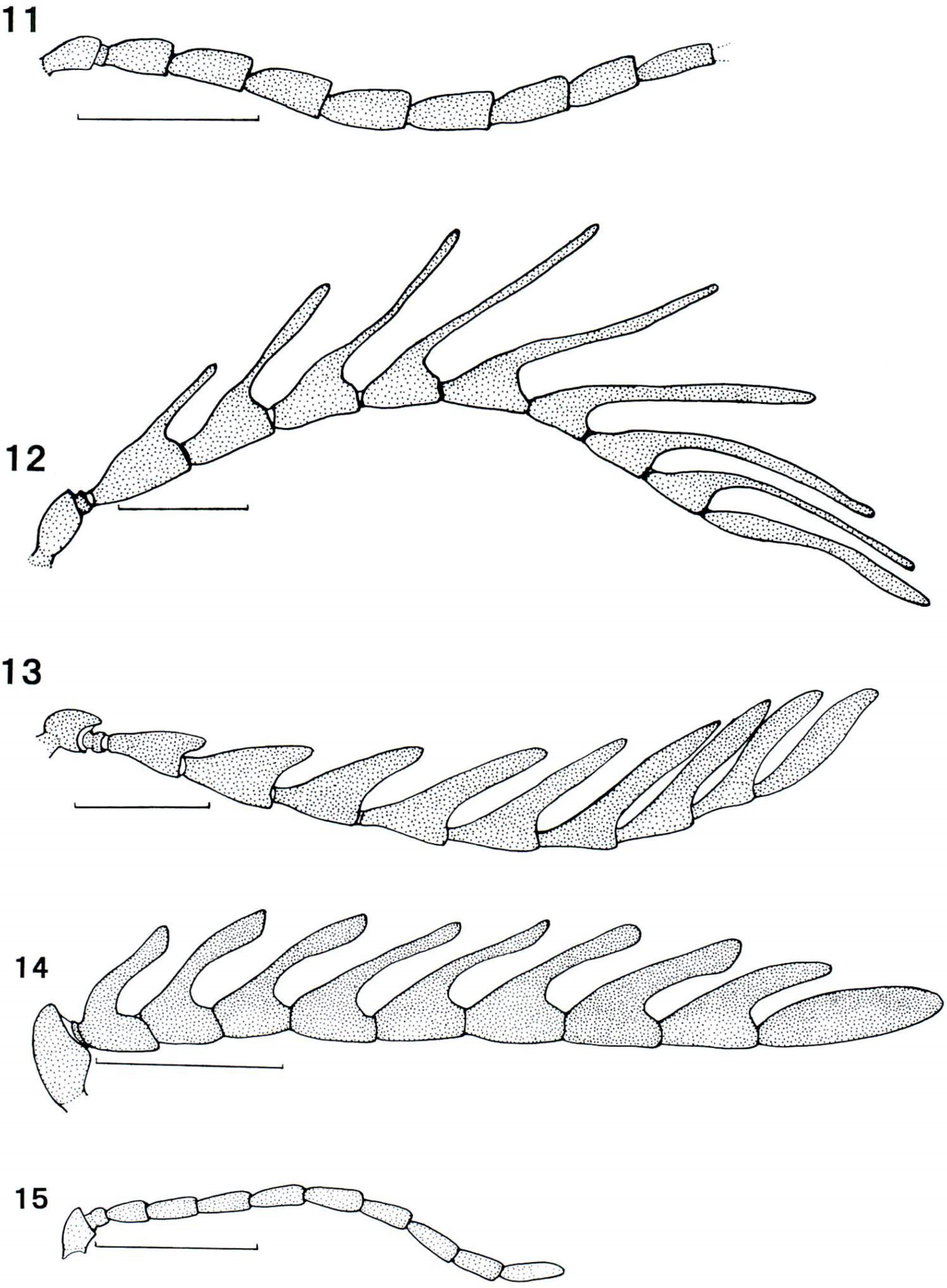
Elytra long, slightly diverging posteriad, dehiscent just behind scutellum and separately



Figs. 1–10. Lycidae spp. 1–5: Head and pronotum; 6–10: maxillary palpus.—— 1 & 6, *Dilophotes matobai* sp. nov.; 2 & 7, *Macrolycus mikagai* sp. nov.; 3 & 8, *Lyponia* (*Ponyalis*) *oshimana matsumurai* subsp. nov.; 4 & 9 *Cautires okinawensis* sp. nov.; 5 & 10, *Eropterus ogatai* sp. nov. Scale for 1–5: 0.5 mm. Scale for 6, 10: 0.1 mm. Scale for 7–9: 0.25 mm.

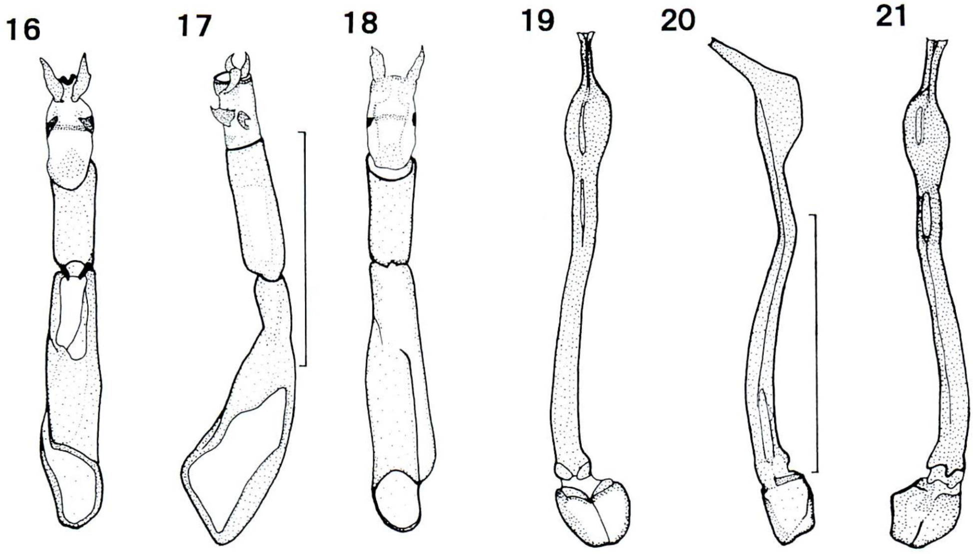
rounded at apices, about 3.4 times as long as wide, about 5.5 times as long as prothorax, each elytron bearing four longitudinal costae; 1st costa obsolete in posterior 1/3, and 3rd costa very short on humerus; intervals between costae coarsely and irregularly punctured.

Ventral surface finely and closely punctured; 7th abdominal sternite widely emarginate at apex; anal sternite elongate, widely rounded at apex.



Figs.11–15. Antennae.—— 11. *Dilophotes matobai* sp. nov.; 12. *Macrolycus mikagai* sp. nov.; 13. *Lyponia* (*Ponyalis*) *oshimana matsumurai* subsp. nov.; 14. *Cautires okinawensis* sp. nov.; 15. *Eropterus ogatai* sp. nov. Scale for 11–15: 1 mm.

Legs moderate in length; femora subclavate, hind tibiae slender, about 1.2 times as long as hind femora; hind tarsi with 1st and 5th segments subequal in length, distinctly longer than 2nd to 4th segments ; claws simple, somewhat angulate at base.



Figs.16–21. Male genitalia.—— *Dilophotes matobai* sp. nov. in ventral (16), lateral (17) and dorsal (18) view; *Macrolycus mikagai* sp. nov. in ventral (19), lateral (20) and dorsal (21)view; Scale for 17: 0.5 mm; Scale for 20: 2 mm.

Male genitalia elongate; median lobe short, cylindrical, with a membranous internal sac bearing a pair of acute projections at apex; phallobase very long, asymmetrical, twisted and gradually dilated apicad.

Female: unknown.

*Measurements*. Length: 4.9 mm; width 0.8 mm.

*Type series*. Holotype: ♂, Mt. Akatsuchi-yama, Uken-son, Amami-Ôshima Is., Kagoshima Pref., Ryukyu Islands, Southwest Japan, 28.VI. 1998, I. MATOBA leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo.

*Distribution*. Amami-Ôshima Is., Ryukyu Islands, Japan.

*Etymology*. This new species is named in honor of Mr. Isao MATOBA, Wakayama, Japan, who collected this interesting new species for the first time.

*Remarks*. This new species is similar to *Dilophotes atrorufus* (KIESENWETTER), but it is distinguished from the latter by the following points: 1) elytra unicolor black, 2) 3rd longitudinal carina on elytron longer in length, 3) median lobe of male genitalia short, cylindrical, with a membranous long internal sac bearing a pair of acute projections at apex.

### Subfamily Lycinae LAPORTE, 1836
### Tribe Macrolycini KLEINE, 1928
### Genus *Macrolycus* WATERHOUSE, 1878

## ***Macrolycus mikagei*** MATSUDA, sp. nov.

(Figs. 2, 7, 12, 19–21)

Male. Body black to blackish brown, shining, with mandibles and claws light reddish brown; head, pronotum, scutellum and legs black to dark reddish brown, shining; antennae black to blackish brown except for the outer lateral sides of 1st and 2nd segments yellowish brown; elytra unicolor red.

Body surface closely furnished with short, recumbent, yellowish brown pubescence; head densely covered with short, suberrect, light reddish brown pubescence; pronotum, scutellum and legs densely covered with short, recumbent, light reddish brown or yellowish gray pubescence; antennae closely covered with short, recumbent, yellowish gray pubescence; elytra closely covered with long, recumbent, carmine red pubescence.

Head mostly concealed under pronotum, finely and closely punctured; frons short, strongly deflexed, slightly rounded in front, with a short narrow longitudinal groove between frontal tubercles, which are not strongly swollen just behind antennal insertions; vertex with a large shallow impression in central portion.

Eyes relatively small, lateral, hemispherically prominent; distance between eyes about 1.6 times as wide as eye diameter.

Antennae long, distinctly exceeding the middle of elytra; 1st segment stout, strongly swollen at apex; 2nd segment very short, cylindrical; 3rd to 10th segments strongly flabellate; the 8th and 9th antennal branchs the longest in length, about 3.9 times as long as the segments; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 0.7 : 0.1 : 1.0 : 0.9 : 0.8 : 0.7 : 0.6 : 0.6 : 0.6 : 0.6 : 2.2.

Maxillary pulpi with terminal segment large, knife-shaped, about 1.7 times as long as wide, about 3.9 times as long as 2nd segement.

Labial pulpi with terminal segment subtriangular, about 1.5 times as long as wide.

Prothorax transverse, about 0.7 times as long as the basal width, 1.5 times as wide as head, narrowed toward basal 1/5, then strongly diverging posteriad; anterior margin widely arched; anterior angles widely rounded; posterior angles sharply projecting laterad; basal margin bisinuate; sides widely reflexed; disc smooth, convex, deeply and triangularly impressed at insides of anterior and posterior corners respectively, finely and closely punctured on central portion, coarsely punctured along antero-lateral margins, provided with a long narrow longitudinal carina in front, a pair of feeble transverse folds at sides and an oval longitudinal fovea before the middle of basal margin.

Scutellum rotundate, slightly emarginate at apex; surface minutely and closely punctured.

Elytra subparallel-sided, slightly diverging posteriad, dehiscent behind the basal 1/10 and separately rounded at apices, about 3.7 times as long as wide, about 5.8 times as long as prothorax; each elytron bearing four longitudinal costae; 3rd costa very obsolete; intervals between costae somewhat rugose, densely and irregularly punctured.

Ventral surface finely and closely punctured; 7th abdominal sternite triangularly emarginate at apex, anal sternite very long, fusiform, rounded at apex.

Legs elongate; hind tibiae about as long as hind femora; hind tarsi with 1st and 5th segments subequal in length, and distinctly longer than 2nd or 3rd segments. claws simple, with a narrow denticle at each apex.

Male genitalia very long; median lobe cylindrical in basal 2/3, then widely swollen in apical 1/3, with the distal portion strongly narrowed apicad; phallobase relatively small.

Female: Eyes relatively small, weakly prominent, distance between eyes about 2.2 times as long as eye diameter. Antennae serrate, rather robust, barely reaching the middle of elytra; relative renghts of 1st to 11th segments from basal to apical: 0.7 : 0.1 : 1.0 : 0.8 : 0.8 : 0.8 : 0.8 : 0.8 : 0.7 : 0.7 : 1.3. Prothorax about 0.7 times as long as the basal width, about 1.7 times as wide as head. Elytra about 3.4 times as long as wide, about 5.2 times as long as prothorax.

*Measurements*. Length: 10.8–12.6 mm; width: 2.7–3.3 mm.

*Type series*. Holotype: ♂, Akatsuchiyama-rindo, Uken-son, Amami-Ôshima Is., Kagoshima Pref., Ryukyu Islands, Southwest Japan, 4. V. 1996, T. MIKAGE leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo. Paratypes: 1♀, Akatsuchiyama-rindo, Amami-Ôshima Is., 4. V. 1996, T. MIKAGE leg. (KMC).

*Distribution*. Amami-Ôshima Is., Ryukyu Islands, Japan.

*Etymology*. This new species is named in honor of Mr. Toshiharu MIKAGE, Saitama, Japan, who collected this interesting new species for the first time.

*Remarks*. This species is similar to *Macrolycus shirakii* NAKANE, but can be distinguished from the latter by the following points: 1) eye diameter longer in male, 2) 6th to 10th antennal branchs distinctly longer in male, 3) male genitalia with median lobe widely swollen in apical 1/3.

### Tribe Lyponiini BOCÁK et BOCÁKOVÁ, 1990
### Genus *Lyponia* WATERHOUSE, 1878
### Subgenus *Ponyalis* FAIRMAIRE, 1899

## ***Lyponia* (*Ponyalis*) *oshimana matsumurai*** MATSUDA, subsp. nov.

(Figs. 3, 8, 13, 22–24)

Male. Body black to dark reddish brown, shining, with mandibles and claws light reddish brown; head, pronotum and scutellum black to dark reddish brown, shining; antennae black except for dark reddish brown 2nd segnment; legs dark reddish brown; elytra unicolor red.

Body surface densely furnished with long, recumbent, yellowish brown pubescence; head and scutellum densely covered with short, recumbent, yellowish brown pubescence; pronotum and legs sparsely covered with short, recumbent, yellowish brown pubescence; antennae closely covered with short, recumbent, reddish brown pubescence; elytra densely covered with short, recumbent, red pubescence.

Head mostly concealed under pronotum, finely and densely punctured; frons short, strongly deflexed, slightly rounded in front, with a short shallow longitudinal groove between frontal tubercles, which are strongly swollen just behind antennal insertions; vertex with a large V-shaped impression in central portion.

Eyes small, lateral, hemispherically prominent; distance between eyes about 2.3 times as wide as eye diameter.

Antennae long, fully reaching the middle of elytra; 1st segment stout, strongly swollen at apex, 2nd segment short, cylindrical, about as long as wide; 3rd to 10th segments flabellate; 8th and 9th antennal branchs the longest in length, about 1.7 times as long as the segments; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 0.5 : 0.2 : 1.0 : 1.4 : 1.3 : 1.1 : 1.1 : 1.0 : 1.0 : 0.9 : 2.1.

Maxillary pulpi with terminal segment, securiform, about 1.4 times as long as wide, a little longer than 2nd segment.

Labial pulpi with terminal segment subtriangular, about 1.3 times as long as wide.

Prothorax transverse, subquadrate, about 0.9 times as long as the basal width, about 1.4 times as wide as head and slightly diverging posteriad; anterior margin widely arched; anterior angles obtusely angulate; posterior angles subrectangular; basal margin bisinuate; sides widely reflexed; disc smooth, slightly convex, finely and spersely punctured in central portion, coarsely and closely punctured along antero-lateral margins, with a short narrow longitudinal carina in front, a pair of wide transverse folds at sides and a long lanceolate fovea before the middle of basal margin.

Scutellum subquadrate, shallowly emarginate at apex; surface minutely and densely punctured.

Elytra subparallel-sided, slightly diverging posteriad, dehiscent just behind basal 1/2 and separately rounded at apecies, about 2.6 times as long as wide, about 4.9 times as long as prothorax; each elytron bearing nine longitudinal costae; intervals between costae with a single row of transverse, subquadrate and irregular cells.

Ventral surface rugose, finely and densely punctured; 7th abdominal sternite deeply emarginate at apex; anal sternite, long, lanceolate, gradually narrowed apicad.

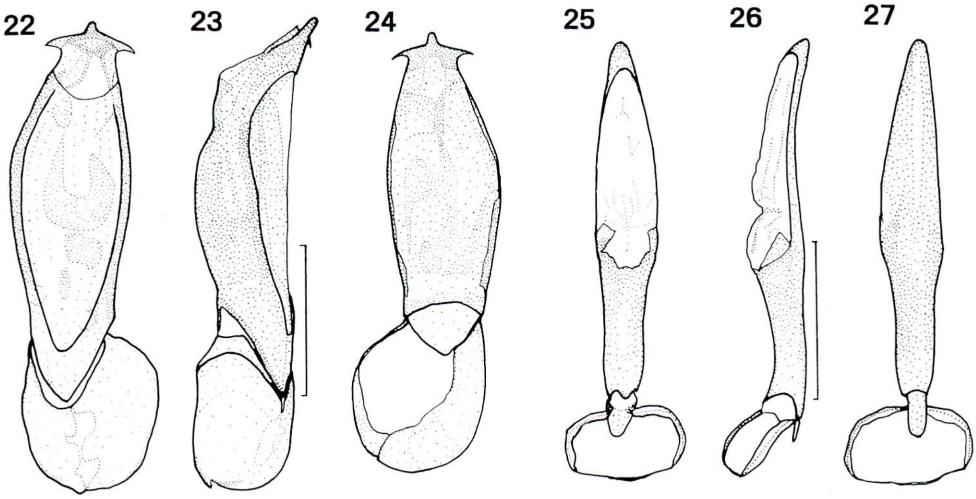
Legs moderate in length; femora subclavate, hind tibiae slender, bow-shaped, slightly shorter than hind femora; hind tarsi with 3rd and 4th segments subequal in length, 5th segment distinctly longer than 4th segment; claws simple, somewhat angulate at base.

Male genitalia relatively long; median lobe fusiform, with arrowhead-shaped apex ; phallobase subglobose.

Female. Eyes small, weakly prominent, distance between eyes about 2.8 times as long as eye diameter. Antennae strongly serrate, slender, not reaching the middle of elytra; relative lengths of 1st to 11th segments from basal to apical: 0.6 : 0.2 : 1.0 : 1.3 : 1.2 : 1.2 : 1.0 : 1.0 : 1.0 : 0.8 : 1.8. Prothorax about 0.8 times as long as the basal width, about 1.7 times as wide as head. Elytra about 2.7 times as long as wide, about 4.7 times as long as prothorax.

*Measurements*. Length: 8.7–13.9 mm; width: 2.9–4.1 mm.

*Type series*. Holotype: ♂, Yona, Kunigami-son, Okinawa-jima Is., Ryukyu Islands, Southwest Japan, 21. III. 1972, M. Matsumura leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo. Paratypes, 1 ♂, Yona, 21. III. 1972, M. Matsumura leg. (KMC); 1 ♂, Yona, 22. III. 1975, H. Ôhira leg. (KMC); 1 ♀, Yona, 6. VI. 1975, S. Imasaka leg. (KMC); 1 ♂, Yona, 3. V. 1988, T. Mikage leg. (KMC); 3 ♂♂, 2 ♀♀,Yona, 20–22. III. 1989, I. Matoba leg. (WPMNH & KMC); 1 ♂, Yona, 31. III. 2006, M. Matsumura leg. (KMC); 2 ♂♂, 2 ♀♀, Mt. Yonaha-dake, Kunigami-son, Okinawa-jima Is., 16-17. III. 1973, K. Matsuda leg. (HUM & KMC); 1 ♀, Mt. Yonaha-dake, 10. V. 1986, T. Goto leg. (KMC); 1 ♂, Yonaha-dake, 30. III. 1987, I. Matoba leg. (KMC); 1 ♀, Mt. Yonaha-dake, 22. III. 1989, I. Matoba leg. (WPMNH); 1 ♂, 1 ♀, Mt. Yonaha-dake, 14. IV. 2002, S. Tsuyuki leg. (NMST); 1 ♂, Benoki, Kunigami-son, Okinawa-jima Is., 9. IV. 1982, M. Sawai leg. (KMC); 1 ♂, Ôkuni-rindo, Kunigami-son, Okinawa-jima Is., 25. III. 1987, M. Sawai leg. (KMC); 2 ♂♂, 2 ♀♀ Ôkuni-rindo, 28. IV. 1996, T. Mikage leg. (OMNH & KMC); 1 ♂, Benoki, Kunigami-son, Okinawa-jima Is., 9. IV. 1982, M. Sawai leg. (KMC); 1 ♂, 1 ♀, Ie-rindo, Kunigami-son, Okinawa-jima Is., 25. IV. 1984, M. Sawai leg. (KMC); 1 ♂, 1 ♀, Okuma-rindo, Kunigami-son, Okinawa-jima Is., 29. IV. 2000, I. Kawashima leg. (KMC); 1 ♂, 1 ♀, Aha, Kunigami-son, Okinawa-jima Is., 21. III. 2008, K. Sugino leg. (URMN); 1 ♂, Aha, 7. IV. 2008, K. Sugino leg. (KMC); 2 ♂♂, 1 ♀, Mt. Nishime-dake, Kunigami-son, Okinawa-jima Is., 21. III. 2008, F. Kimura leg. (KCMI); 2 ♀♀, Nuha, Ôgimi-son, Okinawa-jima Is., 29. IV. 2000, I. Kawashima leg. (KMC); 2 ♀♀, Uehara, Ôgimi-son, Okinawa-jima Is., 17. IV. 2006, M. Matsumura leg. (KMC); 2 ♂♂, 1 ♀, Uehara, 26. III. 2007, M. Matsumura leg.



Figs. 22–27. Male genitalia.—— *Lyponia* (*Ponyalis*) *oshimana matsumurai* subsp. nov. in ventral (22), lateral (23) and dorsal (24) view; *Cautires okinawensis* sp. nov. in ventral (25), lateral (26) and dorsal (27) view; Scale for 23, 26: 0.5 mm.

(URMN&KMC); 3♂♂, 3♀♀, Taiho, Ôgimi-son, Okinawa-jima Is., 26. III. 1996, M. KIMURA leg. (CBM); 1♂, Higashi-son, Okinawa-jima Is., 27. III. 1984, T. MIKAGE leg. (KMC); 2♂♂, Haneji, Nago City, Okinawa-jima Is., 29. III. 1987, M. SAWAI leg. (KMC); 3♂♂, 1♀, Haneji, 15. III. 1992, M. MATSUMURA leg. (KUM & KMC); 1♂, Haneji, 17. V. 1994, M. MATSUMURA leg. (KMC).

*Distribution*. Okinawa-jima Is., Ryukyu Islands, Japan.

*Etymology*. This new subspecies is named in honor of Mr. Masafumi MATSUMURA, Okinawa, Japan, who collected this interesting new subspecies for the first time.

*Remarks*. This new subspecies is closely related to the nominotypical subspecies, *Lyponia* (*Ponyalis*) *amamiensis amamiensis* NAKANE from Amami-Ôshima Is., but can be distinguished from the latter by the following points: 1) elytra relatively shorter in both sexes, 2) pronotum sparsely punctured in central portion, 3) male genitalia with medial lobe distinctly shorter in length.

## Tribe Metriorrhynchini KLEINE, 1926

## Genus *Cautires* WATERHOUSE, 1879

### ***Cautires okinawensis*** MATSUDA, sp. nov.

(Figs. 4, 9, 14, 25–27)

Male. Body black, shining, with mandibles and claws light reddish brown; head, pronotum and scutellum black, shining; antennae black except for dark reddish brown 2nd segnment; legs blackish brown; elytra unicolor red.

Body surface and legs densely furnished with short, recumbent, yellowish brown pubescence; head, antennae, pronotum and scutellum closely covered with short, recumbent, reddish brown pubescence; elytra closely covered with short, recumbent, red pubescence on the longitudinal costae and the marginal rims of reticulate cells.

Head mostly concealed under pronotum, finely and closely punctured; frons short, strongly deflexed, slightly rounded in front, with a short feeble longitudinal groove between frontal tubercles, which are not strongly swollen just behind antennal insertions; vertex with a weak transverse impression in central portion.

Eyes relatively small, lateral, hemispherically prominent; distance between eyes about 1.6 times as wide as eye diameter.

Antennae long, fully reaching the middle of elytra; 1st segment stout, strongly swollen at apex; 2nd segment very short, cylindrical; 3rd to 10th segments flabellate; 10th antennal branch the longest in length, about 1,3 times as long as the segment; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 0.8 : 0.1 : 1.0 : 1.0 : 1.0 : 1.1 : 1.1 : 1.1 : 1.2 : 1.3 : 2.4.

Maxillary pulpi with terminal segment, securiform, about1.6 times as long as wide, a little shorter than 2nd segment.

Labial pulpi with terminal segment securiform, about 1.8 times as long as wide.

Prothorax transverse, subpentagonal, about 0.8 times as long as the basal width, about 1.5 times as wide as head, feebly sinuate at middle and slightly diverging posteriad; anterior margin obtusely projecting; anterior angles widely rounded; posterior angles triangularly projecting latero-posteriad; basal margin bisinuate; sides widely reflexed; disc smooth, convex, finely and closely punctured in central portion, rugosely punctured along antero-lateral margins, with seven areoles; antero-median areoles slightly narrower than antero-lateral areoles; central lanceolate areole about 1/3 times as wide as postero-lateral areoles.

Scutellum subquadrate, triangularly emarginate at apex; surface minutely and rather closely punctured.

Elytra slightly diverging posteriad, dehiscent behind scutellum and separately rounded at apecies, about 3.1 times as long as wide, about 4.7 times as long as prothorax; each elytron bearing four longitudinal costae; intervals between costae with double rows of round and irregular cells.

Ventral surface weakly rugose, finely and closely punctured; 7th abdominal sternite roundly emarginate at apex; anal sternite fusiform, gradually narrowed apicad.

Legs moderate in length; hind tibiae slender, slightly dilated apicad, slightly shorter than hind femora; hind tarsi with 2nd to 4th segments subequal in length, 1st and 5th segments distinctly longer than the remainding segments ; claws simple, somewhat angulate at base.

Male genitalia elongate, median lobe lanceolate, widest in the middle, obtusely rounded at apex; phallobase ring-shaped.

Female. Eyes small, weakly prominent, distance between eyes about 2.1 times as long as eye diameter. Antennae serrate, not reaching the middle of elytra; relative lengths of 1st to 11th segments from basal to apical: 0.6 : 0.2 : 1.0 : 1.0 : 1.0 : 1.0 : 1.0 : 1.0 : 1.0 : 1.0 : 2.1. Prothorax about 0.8 times as long as the basal width, about 1.7 times as wide as head. Elytra about 3.2 times as long as wide, about 4.8 times as long as prothorax.

*Measurements*. Length: 7.2–10.1 mm; width: 1.8–2.7 mm.

*Type series*. Holotype: ♂, Mt. Yonaha-dake, Kunigami-son, Okinawa-jima Is., Okinawa Pref., Ryukyu Islands, Southwest Japan, 28. IV. 1975, K. SUGINO leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo. Paratypes: 13♂♂, 3♀♀, Mt.

Yonaha-dake, 28. IV. 1975, K. SUGINO leg. (URMN & KMC); 1 ♂, 1 ♀, Mt. Yonaha-dake, 24. V. 1978, O. YAMAJI leg. (KMC); 2 ♀ ♀, Yona, Kunigami-son, Okinawa-jima Is., 3. V. 1988, T. MIKAGE leg. (HUM & KMC); 2 ♂ ♂, Hiji-gawa, Kunigami-son, Okinawa-jima Is., 3. V. 1986, T. GOTO leg. (WPMNH & KMC); 1 ♂, Ôkuni-rindo, Kunigami-son, Okinawa-jima Is., 5. V. 1988, T. MIKAGE leg. (KUM); 8 ♂ ♂, 2 ♀ ♀, Ôkuni-rindo, 28. IV. 1996, T. MIKAGE leg. (KCMI & KMC); 2 ♂ ♂, Okuma-rindo, Kunigami-son, Okinawa-jima Is., 29. IV. 2000, I. KAWASHIMA leg. (KMC); 1 ♂, Iji, Kunigami-son, Okinawa-jima Is., 20. IV. 1997, M. MATSUMURA leg. (KMC); 5 ♂ ♂, Aha, Kunigami-son, Okinawa-jima Is., 29. IV. 2008, K. SUGINO leg. (OMNH & KMC); 5 ♂ ♂, Mt. Otowa-dake, Nakijin-son, Okinawa-jima Is., 17. IV. 1996, M. KIMURA leg. (CBM); 1 ♂, Haneji, Nago City, Okinawa-jima Is., 17. V. 1994, M. MATSUMURA leg. (KMC); 1 ♂, Haneji, 16. IV. 1984, M. SAWAI leg. (KMC); 1 ♀, Mt. Tano-dake, Nago City, Okinawa-jima Is., 3. V. 2005, S. OGATA leg. (KUM); 1 ♂, 1 ♀, Nuha, Ôgimi-son, Okinawa-jima Is., 29. IV. 2000, I. KAWASHIMA leg. (NMST); 6 ♂ ♂, 1 ♀, Uehara, Ôgimi-son, Okinawa-jima Is., 23. IV. 2008, M. MATSUMURA leg. (URMN & KMC).

*Distribution*. Okinawa-jima Is., Ryukyu Islands, Japan.

*Etymology*. This new species is named after the type locality, Okinawa-jima Island.

*Remarks*. This new species is closely related to *Cautires amamiensis* NAKANE, but can be distinguished from the latter by the following points: 1) pronotum unicolor black, 2) elytra unicolor red, 2) antero-median aleoles of pronotum longer in length, 3) terminal segment of labial palpi elongate in male, 4) male genitalia with median lobe much wider in basal 1/3.

## Tribe Erotini LECONTE, 1881

## Genus *Eropterus* GREEN, 1951

### ***Eropterus ogatai*** MATSUDA, sp. nov.

(Figs. 5, 10, 15, 28–30)

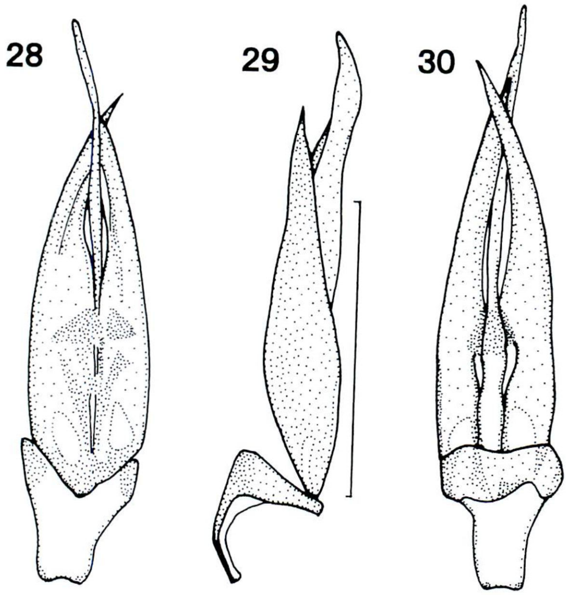
Male. Body blackish brown, shining, with mandibles and claws yellowish brown; head, scutellum and legs black to blackish brown, shining; antennae black to blackish brown except for the terminal segnments somewhat lighter in color; pronotum and elytra black to dark brown with antero-lateral marginal rims of the former and humeral portions of the latter dark reddish brown.

Body surface closely furnished with short, recumbent, yellowish brown pubescence; head, pronotum, scutellum and legs closely covered with short, recumbent, dark reddish brown pubescence; antennae closely covered with long, suberrect, dark reddish brown hairs; elytra densely covered with short, recumbent, dark reddish brown pubescence.

Head mostly concealed under pronotum, finely and rather sparsely punctured; frons short, strongly deflexed, slightly rounded in front, with a deep narrow longitudinal groove between frontal tubercles, which are not strongly swollen just behind antennal insertions; vertex with a shallow oval impression in central portion.

Eyes relatively small, lateral, hemispherically prominent; distance between eyes about 1.5 times as wide as eye diameter.

Antennae short, barely reaching basal 1/3 of elytra; 1st segment stout, strongly swollen at apex; 2nd segment subglobose, about as long as wide; 3rd to 11th segments filiform, relative



Figs. 28–30. Male genitalia.—— *Eropterus ogatai* sp. nov. in ventral (28), lateral (29) and dorsal (30) view; Scale for 29: 0.5 mm.

lengths of 1st to 11th segments from basal to apical: 1.3 : 0.6 : 1.0 : 1.6 : 1.6 : 1.5 : 1.6 : 1.4 : 1.5 : 1.4 : 1.8.

Maxillary pulpi with terminal segment securiform, about 1.5 times as long as wide, about as long as 2nd segment.

Labial pulpi with terminal segment subtriangular, about 1.5 times as long as wide.

Prothorax transverse, subpentagonal, about 0.6 times as long as the basal width, about 1.3 times as wide as head, subparallel-sided in apical 2/3, slightly diverging in basal 1/3; anterior margin widely arched; anterior angles widely rounded; posterior angles triangularly projecting laterad; basal margin bisinuate; sides widely reflexed; disc uneven, convex at middle, deeply and triangularly impressed at insides of anterior and posterior corners, finely and moderately punctured on central portion, coarsely punctured along antero-lateral margins, provided with a narrow longitudinal groove in the middle, and a pair of oblique folds starting from central potion and ending to posterior corners.

Scutellum subquadrate, transversely truncate at apex; surface minutely and rather closely punctured.

Elytra subparallel-sided, dehiscent behind basal 1/2 and separately rounded at apices, about 2.9 times as long as wide, about 5.5 times as long as prothorax; each elytron bearing four longitudinal costae; intervals between costae with double rows of round and irregular cells.

Ventral surface feebly rugose, finely and closely punctured; 7th abdominal sternite roundly emarginated at apex; anal sternite subtriangular, gradually narrowed apicad.

Legs moderate in length; hind tibiae slender, slightly dilated apicad, distinctly shorter than hind femora; hind tarsi with 5th segment the longest in length; 2nd to 4th segments distinctly shorter than 1st or 5th segments; claws simple, somewhat angulate at base.

Male genitalia elliptical; medial lobe elongate, obtusely pointed at apex; parameres narrow and long, acuminate at each apex, the inner margins with a pair of obtuse triangular projections at middle in ventral aspect; phallobase relatively small.

Female. Eyes small, weakly prominent, distance between eyes about 1.9 times as long as eye diameter. Antennae filiform, not reaching the middle of elytra; relative lengths of 1st to 11th segments from basal to apical: 1.3 : 0.8 : 1.0 : 1.7 : 1.6 : 1.6 : 1.6 : 1.6 : 1.6 : 1.5 : 2.0. Prothorax about 0.7 times as long as the basal width, about 1.5 times as wide as head. Elytra about 2.7 times as long as wide, about 5.2 times as long as prothorax. Terminal sternite of abdomen gradually narrowed posteriad, widely rounded at apex, with a long speculum gastrale and a pair of short arms at base. Pygidium subtriangular, with apex widely rounded. Female genitalia elongate; styli small, with three or so short hairs at apices; coxites oblong, gradually narrowed toward apices; valvifers very long.

*Measurements*. Length: 4.2–5.1 mm; width: 1.3–1.6 mm.

*Type series*. Holotype: ♂, Mt. Tano-dake, Nago City, Okinawa-jima Is., Okinawa Pref., Ryukyu Islands, Southwest Japan, 3. V. 2005, S. OGATA leg. The Holotype is deposited in the collection of the Kyushu University Museum, Hakata. Paratypes: 1♀, Iji, Kunigami-son, Okinawa-jima Is., Okinawa Pref., Southwest Japan, 9. VI. 2008, K. SUGINO leg. (URMN); 1♀, Mt. Yonaha-dake, Kunigami-son, Okinawa-jima Is., Okinawa Pref., Southwest Japan, 30. IV. 1991, I. MATOBA leg. (KMC)

*Distribution*. Okinawa-jima Is., Ryukyu Islands, Japan.

*Etymology*. This new species is named in honor of Dr. Seiya OGATA, Prof. Emeritus of the Kyushu University, Fukuoka, Japan, who collected a male of this interesting new species for the first time.

*Remarks*. This new species is similar to *Eropterus nothus* (KIESENWETTER), but can be distinguished from the latter by the following points: 1) terminal joint of maxillary palpi narrower in male, 2) male genitalia with longer parameres, 3) terminal sternaite of abdomen broadly rounded at apex in female.

## Key to the Species of the Genus *Eropterus* from Japan Based on Males

1(2) Pronotum light reddish brown with a large black spot in central portion; elytra black to blackish brown with humeri widely yellowish brown. 5.5–6.1 mm. Yaku-shima Is.………… ……………………………………………………………………………… *E. yakushimaensis* (OHBAYASHI)

2(1) Pronotum and elytra black to dark yellowish brown with the marginal portion of pronotum and elytral humeri usually lighter in color.

3(4) Pronotum and elytra reddish brown to dark yellowish brown; 1st intervals of elytral costae with a single row of transverse cells at middle. 4.1–4.5 mm. Ishigaki-jima Is.………………… ……………………………………………………………………………*E. aritai* (SATÔ et OHBAYASHI)

4(5) Pronotum and elytra black to blackish brown; 1st intervals of elytral costae with double rows of round and irregular cells.

5(6) Male genitalia with parameres wide in middle. 3.8–6.5 mm. Honshu, Shikoku, Kyushu, Yaku-shima and Amami-Ôshima Is.………………………………………*E. nothus* (KIESENWETTER)

6(5) Male genitalia with parameres elongate. 4.2–5.1 mm. Okinawa-jima Is. …………………… ……………………………………………………………………………*E. ogatai* MATSUDA sp. nov.

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## 要　　約

松田　潔：日本産ベニボタル科甲虫の分類学的覚書, I. ——— 沖縄本島と奄美大島で得られたベニボタル科甲虫の標本に基づいて，4新種，アマミホソベニボタル *Dilophotes matobai* sp. nov., オオシマクシヒゲベニボタル *Macrolycus mikagai* sp. nov., オキナワアカハネクロベニボタル *Cautires okinawensis* sp. nov., オキナワカタアカハナボタル *Eropterus ogatai* sp. nov. と1新亜種，オオシマカクムネベニボタル沖縄本島亜種 *Lyponia* (*Ponyalis*) *oshimana matsumurai* subsp. nov. を命名記載した．また，日本産のチビハナボタル属 *Eropterus* 4種の雄の検索表を示した．

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# Addition to the Genus *Smicronyx* of Japan (Coleoptera: Curculionidae)

Katsura MORIMOTO
20–101 Nata-danchi, Higashi-ku, Fukuoka, 811–0205 Japan

and

Isao MATOBA
Wakayama Prefectural Museum of Natural History
Kainan City, Wakayama Pref., 642–0001 Japan

**Abstract** *Smicronyx japonicus* MORIMOTO et MATOBA, sp. nov. is described from Japan, of which the larva grows in the ovary of *Cuscuta pentagona* and pupates in the fed ovary, in debris on the ground, or below the surface of soil. The larva is described with note on the biology. Revised key to species of Japan is provided.

*Smicronyx japonicus* is newly described from Japan as an addition to the genus (MORIMOTO & KOJIMA, 2007). This species was first noticed by the senior author when he revised the Japanese species in 2007 upon a male in the collection of the Kyushu University taken at Sata, Kagoshima Pref. on June 25, 1957 by T. SAIGUSA, but was untouched in that paper because of the imperfection of this single specimen. In 2008, a number of specimens were collected by the junior author on *Cuscuta pentagona* in Wakawaya Prefecture from July to September, and many larvae were found feeding inside the ovaries. Larva is described in detail for the first time on the weevil of the genus *Smicronyx*, together with discussion on the systematic position of the genus by the larval characters.

## *Smicronyx japonicas* MORIMOTO et MATOBA, sp. nov.

Body and appendages reddish brown, except for dark brownish metasternum and venter in most brownish specimens, or reddish brown with blackish head, pronotum, metasternu and venter in most dark specimens, elytra reddish brown with dark brown to blackish sutural stripe on first or first to fourth intervals, and the darkened area expanded laterally at base. Scaling predominantly grayish, not wholly covering derm, denser in male, often almost bare on pronotum in female; pronotum with median and lateral grayish indefinite stripes, scales on admedian areas smaller and brownish gray, elytra with indefinite variable transverse patches in five rows in well scaled specimens, pro- and mesocoxae with grayish scales, metepisterna often with grayish scales on posterior part, the other underside with smaller and sparser scales in general, often with sparse brownish smaller scales.

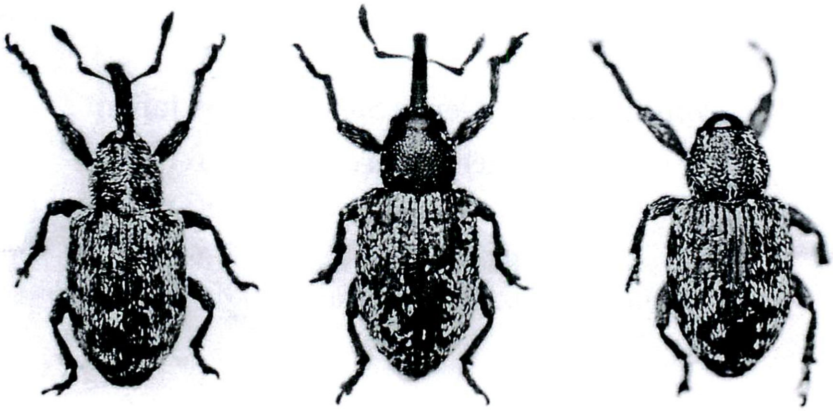

Fig. 1. Photographs of : *Smicronyx japonicus* sp. nov. ♂, ditto ♀; *S. rubricatus* ♂ from left to right.

Head bare, opaque, with small and sparse punctures; rostrum moderately curved, almost of the same thickness on basal half, then slightly tapered apically, with dense punctures in three pairs of rows, interstices between punctures distinctly costate, these punctures and costae weak at apex in male or on apical third in female; dorsal ridge of antennal scrobe rectangular to anteocular sulcus at base. Antennae inserted at apical third of rostrum, bearing a few clavate and a few linear grayish scales on each segment, funicle becoming successively wider apically, second segment about as long as wide, third to seventh transverse.

Pronotum 1.0–1.1 times as wide as long, widest before the middle, almost straight in male or slightly arcuate in female from the widest point to base at sides; disc with dense punctures, interstices narrower than their diameter and coriaceous.

Elytra longer than wide (4 : 3), parallel-sided on basal half, evenly narrowing thence to apex in a curve; striae narrow and sharp, intervals flat, finely wrinkled, each with large punctures in a row.

Femora clavate, with small tooth. Tibiae almost straight at outer margin, weakly dilated internally at apex. Claws connate at base, without seta.

Pygidium with a pair of setiferous scrapers, propygidium with a pair of setiferous pits, both parts with plumose setae.

Male aedeagus with aedeagal body 0.8 times as long as apodemes, 1.4 times as long as wide, weakly dilating apically, simply rounded at apex, internal sac with small conical spinules on basal half, with a group of small sharp spines at gonopore.

Female: Less scaled than in male. Rostrum a little slenderer, with weaker punctures on apical third. Pronotum often less scaled, often weakly curved at sides, punctures on dorsum faintly confluent to form closely arranged and anterolaterally directing rows from the middle. Venter with first ventrite slightly convex ventrally, fifth ventrite flat except for slightly convex basal margin.

Length: 1.9–2.2 mm (excluding rostrum).

Holotype: ♂ (Type no. 3281, Kyushu Univ.), and 80 paratypes: Ao, Hidaka-cho, Wakayama Pref., 19. VII. 2008, 11. VIII. 2008, I. MATOBA leg., on *Cuscuta pentagona* parasitic to *Canavalia lineata*. 1 ♂, Sata, Kagoshima Pref., 25. VI. 1957, T. SAIGUSA leg.

*Etymology*. Named after its locality, Japan.

*Note*. This new species is close to *Smicronyx dentirostris* and *rubricatus*, but is different from them in the characters noted in the following key.

## Revised Key to Species of *Smicronyx* in Japan

1(4) Body and legs entirely black, scaling predominantly whitish, ovate and dense on the underside concealing derm.

2(3) Pronotum 1.5–1.8 times as wide as long, with a median whitish narrow scaly stripe besides broad lateral stripes; femoral teeth obliterated; rostrum in male with a weak median carina. Gall-maker on the stem and flower of *Cuscuta* spp.······· *Smicronyx madaranus* KÔNO, 1930

3(2) Pronotum about as wide as long, without median whitish stripe; femora armed with minute teeth; rostrum without median carina in both sexes. Gall-maker on the stem of *Gentiana scabra.*······················································ *Smicronyx gentianae* MORIMOTO et KOJIMA, 2007

4(1) Body and/or legs entirely or partly brownish to reddish brown; scaling on the underside sparser exposing derm between scales.

5(6) Rostrum smooth, without median carina; pronotum 1.1–1.2 times as wide as long, rather strongly arcuate at sides, with punctures confluent to form closely arranged and anterolaterally directing curved rows from mid line on entire surface; body and legs entirely reddish or chestnut brown. Host-plant: unknown.········· *Smicronyx dentirostris* MORIMOTO et LEE, 1992

6(5) Rostrum carinate at least on basal half; pronotum simply punctuate at least on anterior half; at least metasternum and venter blackish, with reddish brown to dark brownish legs and lateral part of elytra; lateral parts of meso- and metathoraces with denser whitish scales in fresh adults.

7(8) Pronotum 1.15–1.20 times as wide as long, evenly arcuate from hind angle to subapical constriction at sides; second segment of antennal funicle much longer than wide; elytra ovate, widest in the middle. Host-plant: unknown ···········*Smicronyx rubricatus* KÔNO, 1930

8(7) Pronotum 1.0–1.1 times as wide as long, widest before the middle, slightly arcuate or almost straight from the widest point to hind angle at sides; second segment of antennal funicle as long as wide; elytra parallel-sided on basal half. Larvae grow in the ovary of *Cuscuta pentagona* ································· *Smicronyx japonicas* MORIMOTO et MATOBA, sp. nov.

*Biology*. A number of adults were first collected on *Cuscuta pentagona* at Ao, Hidaka-cho, Wakayama Prefecture by the junior author in July 19, 2008, and a mass of this plant were collected in August 11 and sent to the senior author. By dissection of the host plant, the senior author found the eggs and larvae in the ovaries, and we initiated the rearing by placing a mass of host plant on the wet sand or field soil in plastic containers. The larvae were pupate at any one place in the fed ovaries on the host plant, in debris on the ground, or below the surface of soil and sand from August 16 to September 10 without making pupal cell. New adults had emerged from the end of August to October. It is very interesting that the larvae pupate either in the fed host tissue or in the soil below the surface, whereas the site of pupation is generally stable in the tribe in most weevils whether they are pupate in the plant tissue or in the soil.

The host-plant *Cuscuta pentagona* is an invasive species from America and has rapidly been expanding from Tokyo since early 1970's in Japan, but the first specimen of this weevil was collected in 1957, and thus the original host-plant must be the other species of *Cuscuta* native to Japan at that time.

## Description of the Mature Larva

Body stout, moderately curved, about 2.5 mm in length.

Head free, pale brownish except for brownish mouth parts, without marking, a little longer

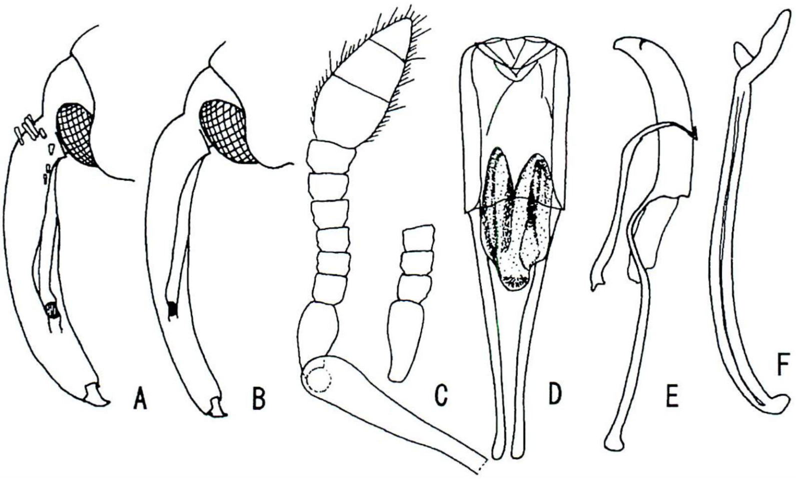

Fig. 2. *Smicronyx japonicus* sp. nov. —— A: Male rostrum; B: Female rostrum; C: Antenna; D·E: Aedeagus, dorsal and lateral; F: Spiculum gastrale.

than wide. Anterior ocellus present, which is visibly an assemblage of three black dots, posterior ocellus absent. Antenna with a bullet-shape segment and two sensilla. Frontal sutures distinguishable throughout its length. Epicranial suture about half the length of head including labrum. Endocarina distinct, less than half the length of frons. Frons with fs1 and fs2 absent, fs3 minute, fs4 and fs5 long. Dorsal epicanial setae long except for obliterated des4. Lateral epicranial seta1 absent, les2 long. Ventral epicranial setae short. Clypeal seta1 longer than cls2. Labrum with a V-shaped sclerotized part extending posteriorly close to the base of clypeus, median sensillum small, lateral sensillum placed between lms1 and lms2. Labral rods distant to each other, overlapping V-shaped sclerotized part of labrum in preparation. Epipharynx with three anterolateral setae, but two are visible dorsally and the innermost one is invisible dorsally by sifting position to the anterior part of labral rod. Mandible with two apical teeth and an indefinite third tooth, with two mandibular setae. Labial palpus with one segment, basal segment can be traced as a slightly pigmented area bearing a sensillum. Premental sclerite complete, without anterior median extension. Postmentum with three pairs of setae arranging in a row on each side. Mala with four ventral and five dorsal setae.

Pronotum not pigmented, with nine to eleven setae, small two setae along posterior margin often obliterated. Postdorsum of meso- and metathoraces with four setae. Alar area with one short seta. Spiracular area with one short and one long setae. Pleurum of prothorax with two setae and two munute additional setae, of meso- and metathoraces with one seta. Pedal area with five setae in three indefinite parts.

Abdomen with eight pairs of spiracles. Typical abdominal segment with three dorsal folds. Prodorsum with one short seta. Postdorsum with five setae. Spiracular area with two setae. Eipleurum with two setae. Pleurum with two setae. Pedal area with one seta. Eusternum with two short setae. Anus terminal, X-shaped.

Spiracles all lateral, with two air tubes, each tube a little longer than peritreme, consisted of 4–6 annulets.

*Notes*. Larva of *Smicronyx* was described by SCHERF (1964) on *S. jungermanniae* of Europe and by AGRAWAL (1984) on *S. roridus* of India, but these descriptions are too simple and

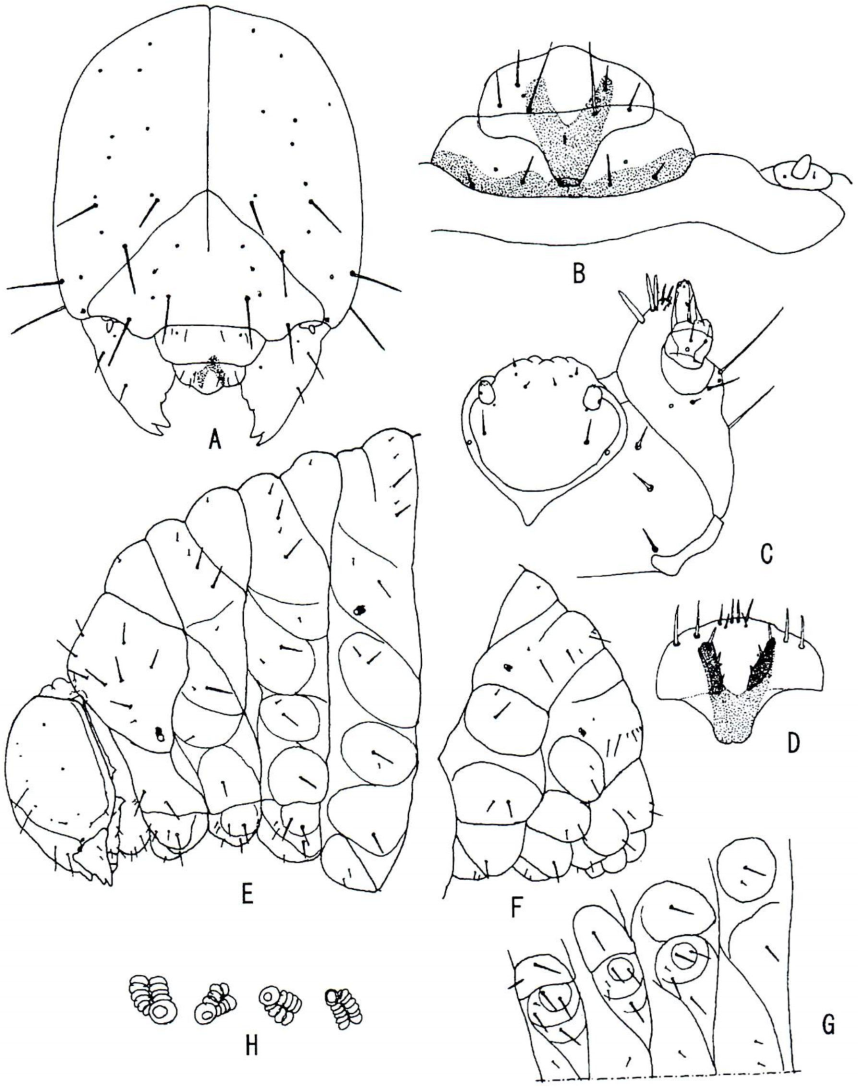

Fig. 3. Larva of *Smicronyx japonicus* sp. nov. —— A: Head, dorsal; B: Clypeus, labrum and antenna; C: Labium and maxilla; D: Hypopharynx; E: Head to abdomen, lateral; F: Caudal part of abdomen, lateral; G: Thorax and abdomen 1, ventral, right half; H: Left spiracle of thorax and abdomen 1, 7 and 8 from left to right.

insufficient to understand the larval characters of the genus. Upon the present species, it bears the following characteristics: clypeus with a V-shaped pigment area in the middle; anterolateral setae of epipharynx three, of which two are exposed beyond anterior margin of labrum and visible dorsally, but the innermost one is sifted its position much interiorly to anterior margin of labral rod and thus invisible dorsally; premental sclerite not produced anteriorly in the middle; cervical plate (*vide* MORIMOTO & KOJIMA, 2003) almost membranous, but may play a fulcurum on each side between head and prothorax by judging from its position; pedal lobe with five setae in three regions.

When tested in the keys upon the larvae of GARDNER (1938), MAY (1993) and LEE & MORIMOTO (1988), this species goes down close to Cionini, Mecinini (=Gymnetrini) and

Anthonomini in having one-segmented labial palpi, but is easily distinguished from these tribes by the characters of the anterolateral setae of epipharynx, all spiracles with two air-tubes, premental sclerite having no median prominence, and of the normal pedal areas. These tribes were assembled in the subfamily Curculioninae by Alonso-Zarazga & Lyal (1999) without giving the strict definition and not on the larval characters. Their range of the subfamily Curculioninae may be said very wide and several lineages may be lumped together for the reason that the presence of intermediate forms among higher taxa, and thus more studies are needed for obtaining the persuasive system of the higher classification of the family Curculionidae both on adults and larvae.

## 要約

森本　桂・的場　績：日本産ケシツブゾウムシ属の追加．——— 2007年に日本産ケシツブゾウムシ属を4種にまとめた際，不完全な１頭の標本でもう１種の存在を知っていたが，2008年に和歌山県日高町阿尾でアメリカネナシカズラから的場が多数の標本を採集したので，新種として記載して５種の検索表を新たに作成した．*Smicronyx japonicus* Morimoto et Matoba ナカグロケシツブゾウムシ（新称）は，前胸の後半と上翅の基半両縁がほぼ平行で，触角第２中間節の長さと幅が等しいなどの特徴によって，前胸の丸みが強く，第２中間節が長く，また上翅が卵形の *S. rubricatus* アカスジケシツブゾウムシから区別できる．本新種は，７月から９月にかけてアメリカネナシカズラの子房中で成長し，食害痕や地表落葉の間，浅い地中などで蛹化する．この属の幼虫としてはじめて詳細な記載を行い，タマゾウムシ族，コバンゾウムシ族，ハナゾウムシ族と共通の群を形成することを明らかにした．最初の１頭が1957年に鹿児島県佐多岬で採集されていることから，1970年代に東京から分布を拡大している帰化植物のアメリカネナシカズラ以外のネナシカズラ類が元の加害植物であると思われる．

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*Entomological Review of Japan*, **64** (1): 73–76, June 30, 2009

# A New Species of the Genus *Dianous* LEACH from Yunnan, Southeast China (Coleoptera: Staphylinidae)

Qin-Fen SHENG, Liang TANG and Li-Zhen LI *

Department of Biology, Shanghai Normal University,
Shanghai, 100 Guilin Road, Shanghai, 200234 P. R. China

**Abstract** A new species of the genus *Dianous* LEACH collected from Yunnan Province is described under the name of *Dianous bellus* sp. nov. and its diagnostic characters are illustrated.

*Dianous* LEACH is one of the genera of the subfamily Steninae. Up to the present, 93 species have been recorded from China and 36 species from Yunnan Province (PUTHZ, 2005). Recently, we examined the specimens of *Dianous* collected from Yunnan and found a new species belonging to *Dianous chinensis* species-complex (sensu PUTHZ, 2000). In the present paper, we would like to deal with the new species.

The type specimens treated in this study are deposited in the following collections:

SHNU: Department of Biology, Shanghai Normal University, P. R. China;

cPut: Private collection of V. PUTHZ, Schlitz, Germany.

The proportional measurements are abbreviated as follows: BL = body length, measured from the anterior margin of the clypeus to the posterior margin of 10th abdominal tergite; FL = forebody length, measured from the anterior margin of the clypeus to the apex of the elytra (apicolateral angle); AE = average distance between eyes; EYL = length of eyes; TL = length of temples; HW = greatest width of head including eyes; PW = greatest width of pronotum; PL = length of pronotum; EW = greatest width of elytra; EL = greatest length of elytra; SL = length of suture.

## Description

### *Dianous bellus* sp. nov.

(Figs. 1–9)

Type material. Holotype: ♂, CHINA: Yunnan Prov., Nabanhe N. R., Bengganglahu, 15. I. 2004, Li-Zhen LI & Liang TANG leg. (SHNU). Paratypes: 2♂♂, 1♀, CHINA: Yunnan Prov.: same data as for the holotype (1♂, 1♀ in SHNU, 1♂ in cPut).

BL: 4.6–4.9 mm; FL: 2.6–2.7 mm. Proportional measurements of holotype: AE: 31.5, EYL: 24.5, TL: 7.5, HW: 52.5, PW: 40.5, PL: 41.0, EW: 60.0, EL: 65.0, SL: 51.5.

Black, with greenish metallic lustre, rather iridescent, with purple tint on posterior half of pronotum and brassy tint on elytra. Antennae, palpi and legs dark brown with weak metallic tint. Clypeus and labrum blue metallic, moderately densely pubescent.

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*Corresponding author

Head distinctly narrower than elytra, longitudinal furrows on frons deep, with median portion slightly broader than each of the side portions and extending a little beyond the posterior side portions; punctation coarse and dense, longitudinally confluent on posterior half, diameter of puncture as wide as basal cross section of antennal segment 3, interstices distinctly smaller than half diameter of puncture. Antennae long, extending beyond the posterior margin of pronotum, penultimate segments about 1/3 longer than broad.

Pronotum nearly as long as broad, broadest at about apical 2/5, roundly convergent anteriorly and sinuous posteriorly; a transverse impression just behind anterior margin, a pair of oblique lateral impressions at about middle and a broad flat before posterior margin, a pair of swellings present between lateral impressions and flat; punctures coarse and dense, distinctly coarser than those on head, confluent around the median portion, where the sculpture is more or less tortuous, and interstices sharp and narrower than half diameter of puncture, except those on swellings and middle part of pronotum, which are as broad as diameter of puncture.

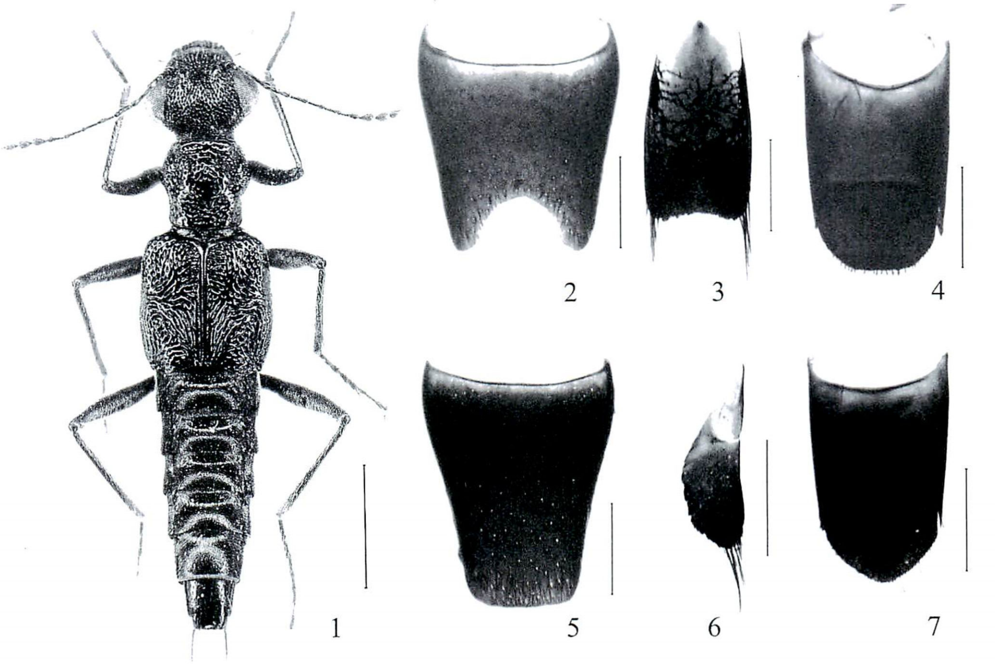
Elytra subquadrate, sutural and humeral impressions distinct; punctures coarser than that of pronotum in dorsal view, fine and dense in declining lateral area, well delimited mainly on humeri, strongly confluent and forming long sulci on the rest; sculpture consisting of long rugae, the rugae direct from suture posteriolaterad to about middle on anterior half, and are vorticose on posterior half except those in rosette form; interstices between sulci sharp and very narrow except those near posterior margin, which are as broad as a sulcus.

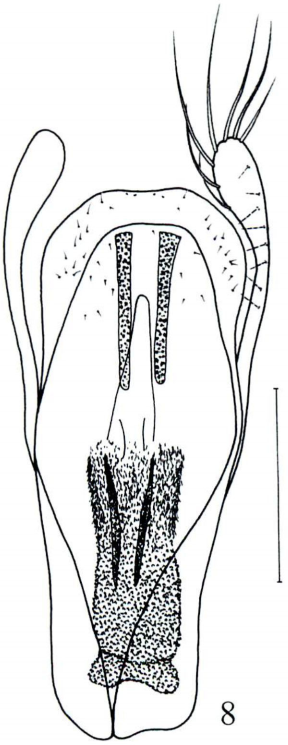
Abdomen broad, horizontal paratergites broad, those of tergite 4 slightly broader than medial cross section of metatibia, finely and very densely punctate; basal furrows of tergites deep, tergite 7 with a broad membranous fringe at apical margin. Punctures fine and dense, slightly smaller than medial eye facet on tergites 3–7, interstices are distinctly narrower than punctures, punctures becoming distinctly larger and sparser on tergites 8–10, distinct reticulate mirosculpture presenting only on last 2 abdominal tergites.

Legs slender, metatarsi about 0.91 times as long as metatibiae, segment 1 shorter than the 3 succeeding segments combined (27 : 31), longer than the last segment (27 : 22); segment 4 of metatarsi simple, lacking bristle shoe.

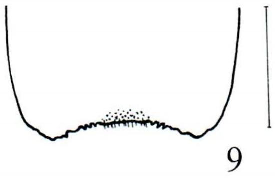
Male. Metasternum strongly convex, very broadly flat in median area, with a distinct longitudinal median line, shallowly impressed and impunctate posteriomedially, with some coarse, and sparse punctures laterally, surface densely and distinctly reticulate, impunctate along the median line. Sternites 3-6 coarsely and moderately sparsely punctate medially, interstices about as large as diameter of puncture, densely and shallowly reticulate. Sternite 7 with hind margin shallowly emarginate at middle and shallowly impressed before it, punctures and pubescence distinctly denser on the impression than those on sides. Hind margin of sternite 8 (Fig. 2) triangularly emarginate at middle. Sternite 9 (Figs. 3, 9) devoid of apicolateral tooth, with hind margin serrate, apicomedian portion with a small area of asacl (apically spinulose arcuate cuticular laminae). Tergite 10 (Fig. 4) broadly round. Aedeagus (Fig. 8) with median lobe broadened and obtuse apically, slightly emarginate at middle of apex; parameres longer than median lobe and broadened apically, with 7 long and strong apical setae and 8 short and thin apicomedial setae.

Female. Sternite 7 with hind margin indistinctly emarginate at middle and flattened before it, punctures and pubescence on flattened area distinctly denser than those on sides. Sternite 8 (Fig. 5) with hind margin nearly straight. Valvifer (Fig. 6) nearly round apicolaterally. Tergite





Figs. 1–9. *Dianous bellus* sp. nov. 1, adult habitus; 2, 8th male sternite; 3, 9th male sternite; 4, 10th male tergite; 5, 8th female sternite; 6, valvifer; 7, 10th female tergite; 8, aedeagus; 9, apcial portion of 9th male sternite. Scale bar = 1 mm (Fig. 1), scale bars = 0.25 mm (Figs. 2–7), scale bars = 0.25 mm (Figs. 8 & 9).



10 (Fig. 7) with hind margin slightly prominent at middle.

*Remarks.* On the basis of morphological structures of aedeagus, this new species belongs to *Dianous chinensis* complex. Although the new species very resembles to the member of *Dianous aereus-andrewesi* complex (sensu PUTHZ, 2000) in general appearance, especially to *D. aereus* CHAMPION, 1919 and *D. brevicornis* PUTHZ, 2000, it is separable from the latter two species by the following points: 1, elytral sculpture vorticose on posterior half, while it is directed from middle to suture in *D. aereus* and *D. brevicornis*; 2, punctation on abdominal tergites and sternites distinctly denser; 3, longer elytra and different sexual characters. It can be easily distinguished from the members of *Dianous chinensis* complex by combination of the following characters: strongly metallic tint on whole body, elytra without yellow spots and elytra with long rugae. In the key of PUTHZ 2000, the new species should be placed at couplet 200.

*Distribution.* China (Yunnan).

*Etymology.* The specific name is derived from the Latin word, "bellus", which means beautiful.

## Acknowledgements

We wish to express our hearty thanks to Dr. V. PUTHZ for his kind guidance on our study and critically reading the manuscript, Mr. Y. HAYASHI, Dr. K. ANDO and Mr. J.-Y. HU for helping us in many ways. The research was support by the Knowledge Innovation Project of Shanghai Municipal Education Commission (Zoology) and Shanghai Normal University (No. SK200911).

## 要約

盛　勤芬・湯　亮・李　利珍：雲南産 *Dianous* ヒョウタンメダカハネカクシ属の１新種. ——— 雲南省から *Dianous chinensis*-group に所属する顕著な１新種を *Dianous bellus* sp. nov. と命名し，記載した.

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# New or Little-known Tenebrionid Species from Japan (8)
# Two New Species from the Danjo-guntô and Ryukyu Islands

Katsumi Akita
Hisai-iba-chô 66, D–304, Tsu City, Mie Pref., 514–1108 Japan

and

Kimio Masumoto
Institute of Human Living Culture Studies, Otsuma Women's University,
Tokyo, 102–8357 Japan

**Abstract** Two new tenebrionid species, *Tarpela adachii* sp. nov. and *Platydema ootsuboi* sp. nov., are described from the Danjo-guntô. and Ryukyu Islands, respectively.

In the continuous study on the Japanese tenebrionid species, we had an opportunity of examining two unknown species. One belongs the genus *Tarpela* from the Danjo-guntô Islands, Nagasaki Prefecture. The other species belongs to the genus *Platydema* from Tokuno-shima and Amami-ooshima Islands, the Ryukyu Islands. After a careful study, we have concluded that they are new to science. Thus, we are going to describe two species as new members of the fauna of Japan.

Before going further in details, we wish to express cordial thanks to Messrs. Kazuo Adachi (Fukuoka), Hirofumi Ootsubo (Kagoshima), Kiyotaka Nakasaki (Hiroshima) and Masahiro Hanatsuka (Tokyo) for offering the materials. We also appreciate Dr. Makoto Kiuchi, Tsukuba City, for taking photographs inserted in the present paper.

The holotypes will be deposited in the collection of the National Museum of Nature and Science, Tokyo (NSMT).

## Tribe **Helopini**

### *Tarpela adachii* sp. nov.

(Figs. 1–8)

[Japanese name: Danjo-marumune-gomimushidamashi]

Body rather elongate, gently convex dorsad, constricted between fore and hind bodies; brownish black, major part of head, pronotum and elytra piceous with dark greenish tinge, antennae, mouth parts and tarsi dark yellowish brown, hairs on antennae, mouth parts and tarsi pale yellowish brown; head and elytra moderately shining, pronotum strongly, metallically shining, dorsal sides of legs moderately shining, ventral sides of those rather strongly, somewhat vitreously shining, major parts of ventral surface alutaceous; dorsal surface almost glabrous, antennae, mouth parts with fine hairs, ventral sides of tarsi with tufts of rather long hairs. Apterous.

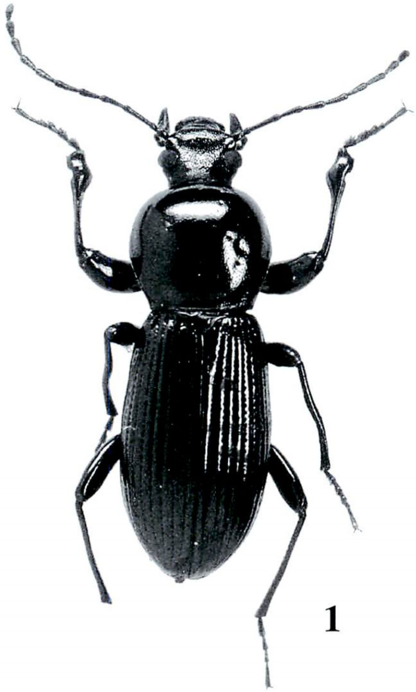

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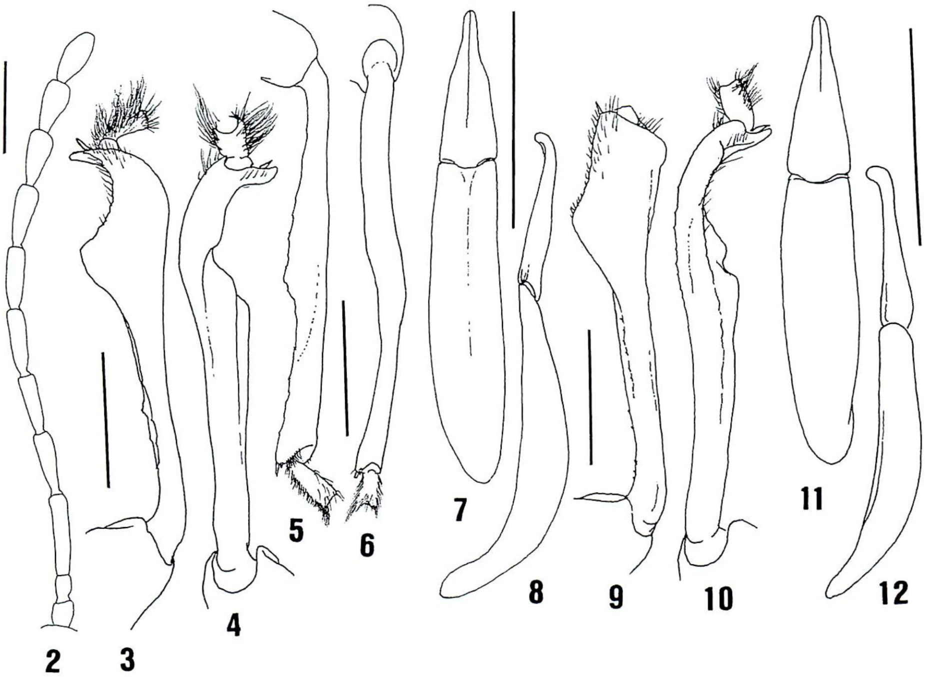
Fig. 1. *Tarpela adachii* sp. nov., holotype, ♂

Male: Head rather transversely elliptical, weakly raised posteriad; clypeus transverse, feebly depressed, irregularly punctate, gently produced at apex with widely trapezoidal membranous part; genae obliquely raised, finely puncate, bordered from clypeus by fine sulci; frons somewhat widely V-shaped, feebly raised medially, rather strongly, irregularly punctate, gently inclined posteriad from vertex, diatone about 2.3 times the width of eye diameter; neck finely, closely punctate. Eyes subovate in dorsal view, gently convex laterad, slightly obliquely inlaid into head and grooved along antero-interior margins. Antennae subfiliform, reaching basal 1/4 of elytra, ratio of the length of each segment from base to apex: 0.40, 0.18, 0.78, 0.63, 0.58, 0.60, 0.59, 0.58, 0.56, 0.52, 0.54.

Pronotum subquadrate, about 1.1 times as wide as long, widest at apical 2/5; apex wider than base, feebly emarginate in middle, sinuous in lateral parts, finely rimmed; base weakly produced in middle, sinuous in lateral parts, finely rimmed; front angles obtuse, with rounded corners, hind angles obtuse with angular corners; sides declined, rather steeply in anterior parts and mildly in posterior parts, to lateral margins, which are moderately roundly produced laterad, feebly sinuous before hind anlges and very finely rimmed; disc moderately convex, finely punctate, very sparsely scattered with large punctures, with an obscure median line. Scutellum slightly widely subcordate, weakly convex and scattered with minute punctures in antero-medial part, flattened in lateral parts.

Elytra subfusiform, about 1.8 times as long as wide, 2.1 times the length and 1.1 times the width of pronotum, widest at the middle, feebly narrowed at basal 2/7; dorsum moderately convex, highest at basal 3/7; disc rather strongly punctato-striate, the punctures small in interior parts, becoming coarser in lateral parts; intervals convex, scattered with microscopic punctures, somewhat transversely micro-aciculate; humeral parts rather degenerated; lateral margins punctate-grooved and finely rimmed; apices feebly roundly produced.

Maxillary palpi subsecuriform, with apical segments oblique at apices; gula parabolical, coriaceous, finely, longitudinally ridged in anterior part, transversely wrinkled in basal part. Prosternum fused with proepisterna, transversely wrinkled; intercoxial space strongly raised, with exterior margins noticeably toothed; prosternal process nearly equilateral triangular. Mesosternum short, gently raised posteriad, punctate. Metasternum rather short, coriaceous and strongly punctate. Abdomen rather closely punctate, the punctures in sternites 1st and 2 nd strong, those becoming finer from 3rd to 5th (anal sternite), lateral margins of 1st to 3rd clearly bordered, those of 4th weakly rimmed in posterior parts, the same of 5th finely and clearly bordered.



Figs. 2–12. *Tarpela* spp. ♂. 2–8, *T. adachii* sp. nov., holotype; 9–12, *T. tsushimana* NAKANE; 2, antenna; 3 & 9, right protibia (in dorsal view); 4 & 10, same (in lateral view); 5, right mesotibia (in dorsal view); 6, same (in lateral view); 7 & 11, male genitalia (in dorsal view); 8 & 12, same (in lateral view). Scales: 1 mm.

Legs slender, tibiae modified (see Figs. 3–6); protibia gouged in apical 1/3, interior edge with tooth at apical 1/4, apex flattened and produced ventrad; mesotibia with dorsal face nearly straight, ventral face gouged in apical half, angulate at the middle; metatibia nealy straight, intero-ventral face with sparsely crenulate; ratios of the lengths of pro-, meso- and metatarsal segments: 0.32, 0.32, 0.30, 0.23, 0.67; 0.32, 0.35, 0.36, 0.24, 0.68; 0.36, 0.33, 0.29, 0.63.

Male genitalia elongated fusiform, 2.21 mm in length, 0.27 mm in width; basal piece curved in lateral view; lateral lobes fused with each other, 0.65 mm in length, with trianglar basal part and prolonged apices.

Female: Body more ovate; antennae shorter, diatone about 2.5 times the width of eye diameter, pronotum nearly barrel-shaped, legs not intricately modified.

Body length: 10.8–11.5 mm.

*Type series.* Holotype: ♂, "Oshima Is. / Danjo Isls. / Nagasaki. JAPAN. / 4. V. 2005. / Kazuo ADACHI leg." // K. AKITA /Collection / KAC 32714. Paratypes: 1 ♂, 1 ♀, same date as the holotype.

*Notes.* This new species is a member of the species-group of *Tarpela cordicollis* (MARSEUL, 1876). The group consists of following species: *T. amamiensis* KASZAB, 1964, from Amami-ooshima Island, *T. tsushimana* NAKANE, 1979, from Tsushima Island, *T. kimurai* MASUMOTO, 1996, from Kume-jima Island, *T. tokunoshimana* MASUMOTO & AKITA, 2001, from Tokuno-shima Island and *T. todai* ANDO, 2006, from Ishigaki-jima Island. Of those, *T. tsushimana* and the present new species are brachypterous or apterous. The latter can be distinguished from the former by the body more strongly convex dorsad, and more strongly constricted between the fore and hind bodies, brownish black (reddish brown in *Tt* = *T. tsushimana* NAKANE), the dorsal surface more strongly shining, the pronotum and elytra piceous (dark brown in *Tt* ), the pronotum widest at apical 2/5 (widest at the middle in *Tt*), the elytra more strongly punctato-striate, the protibia gouged in apical 1/3 (not gouged in *Tt*), and the male genitalia different in shape.

The specific name is given in honor of Mr. Kazuo ADACHI, who collected the type specimens.

## ***Platydema ootsuboi*** sp. nov.

(Figs. 13–15)

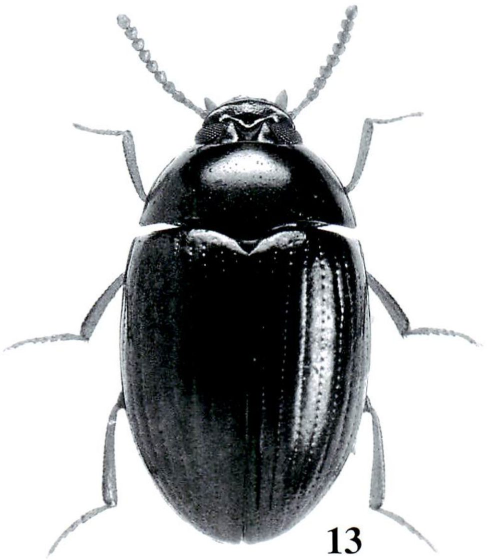
[Japanese name: Ootsubo-kinoko-gomimushidamashi]

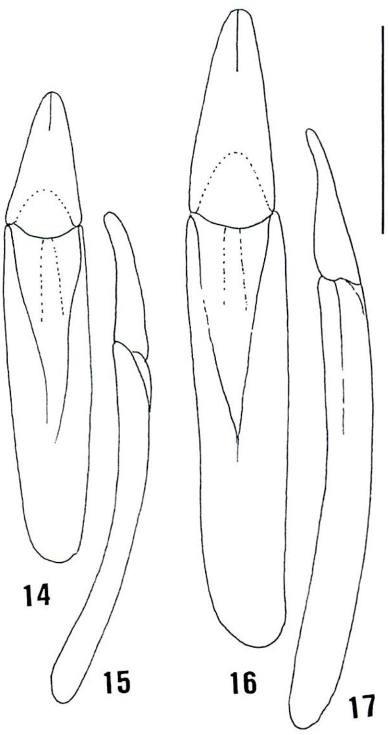
Body dark reddish black, head, pronotum, scutellum and elytra black, pronotum and elytra with feeble dark greenish tinge, antennae, mouth parts, and legs reddish brown, hairs on antennae and legs pale yellowish brown, head moderately shining, pronotum rather strongly, metallically shining, scutellum strongly shining, elytra moderately, feebly metallically shining; body almost glabrous, antennae and legs, particularly on ventral sides, clothed with fine hairs. Body ovate, strongly convex dorsad.

Male: Head somewhat semicircular, depressed in anterior part, raised in posterior parts, very weakly covered with isodiametric microsculpture, irregularly scattered with microscopic punctures; clypeus transversely subelliptical, widely and weakly convex in middle, apical margin produced, with a weak projection at the middle, fronto-clypeal border widely grooved in V-shape; genae rather small, obliquely weakly raised, depressed in interior parts, with outer margins slightly produced; frons with a pair of subconical horns at the level of the anterior 1/3 of eyes, area between horns rather steeply concave anteriad. Eyes fairly large, convex laterad, obliquely inlaid into head; diatone about 1.3 times the width of an eye diameter. Antennae slightly thickened apicad and clavate in eight apical segments, reaching basal 1/5 of elytra, ratio of the length of each segment from base to apex: 0.15, 0.06, 0.14, 0.14, 0.14, 0.13, 0.13, 0.13, 0.13, 0.12, 0.20.

Pronotum somewhat trapezoidal, about 2.3 times as wide as long, widest at base; apex very slightly emarginate, feebly sinuous in lateral parts, wholly finely rimmed; base gently produced in medial part, widely sinuous on each side, weakly impressed along margins in lateral parts, with a pair of weak longitudinal impression close to base on each side; front angles subrectanglar with rounded corners, directed to antero-ventrad, hind angles subrectanglar with rounded corners, directed to latero-posteriad; disc strongly, broadly convex, very weakly covered with isodiametric microsculpture, rather closely scattered with minute punctures, which are slightly smaller than those on the head; sides rather steeply declined to lateral margins, which are gently rounded, noticeably grooved and finely rimmed, the grooves and rims visible from above. Scutellum slightly widely triangular with rounded sides, gently convex, smooth, very sparsely scattered with small punctures in basal and lateral parts.

Elytra 1.7 times as long as wide, 4.0 times the length and 1.2 times the width of pronotum, widest at basal 1/3; dorsum strongly convex, highest at basal 1/4; disc very weakly covered with isodiametric microsculpture, with rows of small punctures, which are rather closely set and shallowly grooved, particularly in lateral parts; intervals rather wide and weakly convex, rather irregularly scattered with microscopic punctures, which are almost of the same size in those on





Figs. 13–17. *Platydema* spp. ♂., 13–15, *P. ootsuboi* sp. nov., holotype; 16 & 17, *P. higonium* Lewis; 13, Habitus; 14 & 16, male genitalia (in dorsal view); 15 & 17, same (in lateral view). Scale: 0.5 mm.

the pronotum.

Maxillary palpi securiform, with terminal segment oblique at apex. Gula subparabolical, somewhat coriaceous, with a pair of short impressions in apical parts. Prosternum rather short, coarsely punctate in anterior part, longitudinally raised in medial part, with intercoxal space and posterior part raised, flattened and somewhat alutaceous, prosternal process triangular and steeply inclined in posterior margin. Mesosternum very short, deeply hollowed opposite to prosternal process, with posterior part strongly raised in V-shape. Metasternum rather short, weakly convex in medial part, gradually inclined laterad, punctate in antero-lateral parts, with a median groove in posterior 3/5. Abdomen covered with isodiametric mircosculpture, sternites 1st – 3rd rather closely punctate and longitudinally wrinkled in basal lateral parts, 4th rather weakly punctate and depressed in basal part, 5th (anal sternite) finely punctate and depressed in basal part.

Legs common shaped among species in this genus; ratios of the lengths of pro-, meso- and metatarsi: 0.15, 0.07, 0.06, 0.05, 0.28; 0.29, 0.12, 0.11, 0.10, 0.29; 0.33, 0.16, 0.12, 0.30.

Male genitalia elongated subfusiform, 1.15 mm in length, 0.15 mm in width, weakly curved in lateral view; basal piece 0.94 mm in length, feebly widened in middle; fused lateral lobes 0.30 mm in length, somewhat subparallel-sided in basal parts and nib-shaped in apical parts, and not flattened like in other species,

Female: Clypeus less produced anteriad and without projection at the middle of anterior margin, frons with a pair of indistinct protuberance.

Body length: 4.7–5.6 mm.

*Type series*. Holotype: ♂, "Japan; Ryukyus / Tokuno-shima Is. / Tokunoshima-chô / Inokawa, 24. I. 2009 / Hirofumi Ootsubo leg." // K. Akita / Collection / KAC 33677. Paratypes. Tokuno-shima Is.: 2 exs., same data as the holotype; 2 exs., Hagedake-rindô, 11. II.

2009, Hirofumi OOTSUBO leg.; Amami-ooshima Is.: 1 ex., Mt. Akatsuchi-yama, 30. V.–1. VI. 2005, M. HANATSUKA leg.; 1 ex., Akatsuchiyama-rindô, 200–300m, 7. V. 1999, K. AKITA leg.; 1 ex., Setouchichûô-rindô, 300–500m, 5. V. 1999, K. AKITA leg.; 23 exs., Uken-son, Chûô-rindô, 150–300m, 6–8. V. 1999, K. AKITA leg.; 2 exs., same data (emerged in 8. VI. 1999); 2 exs., same date (emerged in 30. VI. 1999); 6 exs., Uken-son, Chûô-rindô, 22–24. VI. 1999, K. AKITA leg.

*Notes.* Specimens from Amami-ooshima Island are slightly different in coloration (the pronotum and elytra without greenish tinge) from the nominate form from Tokuno-shima Island.

This new species resembles *Platydema higonium* LEWIS, 1894, distributed in the main islands of Japan, but can be distinguished from the latter by the body smaller (5.0–6.5 mm in *P. higonium*), punctures of the head smaller and shallower, and the male genitalia different in shape.

This specific name is given in honor of Mr. Hirofumi OOTSUBO, who collected the holotype of the present new species.

## 要約

秋田 勝己・益本 仁雄：日本産ゴミムシダマシ科甲虫の新種・稀少種（第８報） 男女群島および琉球産の2新種. ——— 今回は男女群島男島からマルムネゴミムシダマシ族の新種 *Tarpela adachii* sp. nov. ダンジョマルムネゴミムシダマシ, 徳之島および奄美大島からキノコゴミムシダマシ族の新種 *Platydema ootsuboi* sp. nov. オオツボキノコゴミムシダマシを命名記載した.

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# New Species of the Genus *Rehumius* (Coleoptera: Tenebrionidae) from Thailand

Kimio MASUMOTO

Institute of Human Culture Studies, Otsuma Women's University,
Tokyo, 102–8357 Japan

and

Katsumi AKITA

Hisai-iba-chô 66, D–304, Tsu City, Mie Pref., 514–1108 Japan

**Abstract** Three new species of the genus *Rehumius* are described from Thailand: *R. becvari* sp. nov., *R. andoi* sp. nov., and *R. schawalleri* sp. nov. A diagnostic key to the species of the genus is also provided.

Species of the genus *Rehumius* are apterous, 5.5–11 mm in length, possessed of their bodies with the strongly convex pronotum and ovate elytra, and mostly dark in colour. They are distributed in Indochina, Thailand and the Malay Peninsula.

The genus *Rehumius* was erected by FAIRMAIRE in 1893 for *R. amplithorax* from Pnom Penh (type species) and *R. laevior* from Penang. PIC (1928) described a new species of this genus from Laos. In his revisional study "Die indomalayischen Misolampinen (Coleopt., Tenebr.)", KASZAB (1941) erected the genus *Melobates* and described two spicies, *M. biroi* and *M. micros*. Later, KASZAB (1983) revised the species of these two and some other related genera, and he regarded *Melobates* as a junior synonym of *Rehumius*. At the same time he added three new species to *Rehumius*. ANDO (1997) described one species from Thailand. Therefore, in total, nine species of the present genus have hitherto been known.

On an occasion of the trip of studying entomology to Europe, Dr. Wolfgang SCHAWALLER and Ing. Stanislav BEČVÁŘ kindly permitted the senior author to loan specimens including a holotype of *R. masumotoi*. He asked the junior author to join the present study. In this article, they are going to describe three new species.

Before going further in details, they would like to express their cordial thanks to Dr. W. SCHAWALLER, Staatliches Museum für Naturkunde, Stuttgart, and Ing. Stanislav BEČVÁŘ, Czech Republic. They also express their gratitude to Dr. Makoto KIUCHI, Tsukuba City, for taking very clear photographs inserted in this paper.

Abbreviations used in this paper are as follows: SMNS — Staatliches Museum für Naturkunde (Stuttgart); CB — Collection of Stanislav BEČVÁŘ, Czech Republic (in the National Science Museum, Prague).

## Descriptions of New Species

### *Rehumius becvari* sp. nov.

(Figs. 1–2, 7–11)

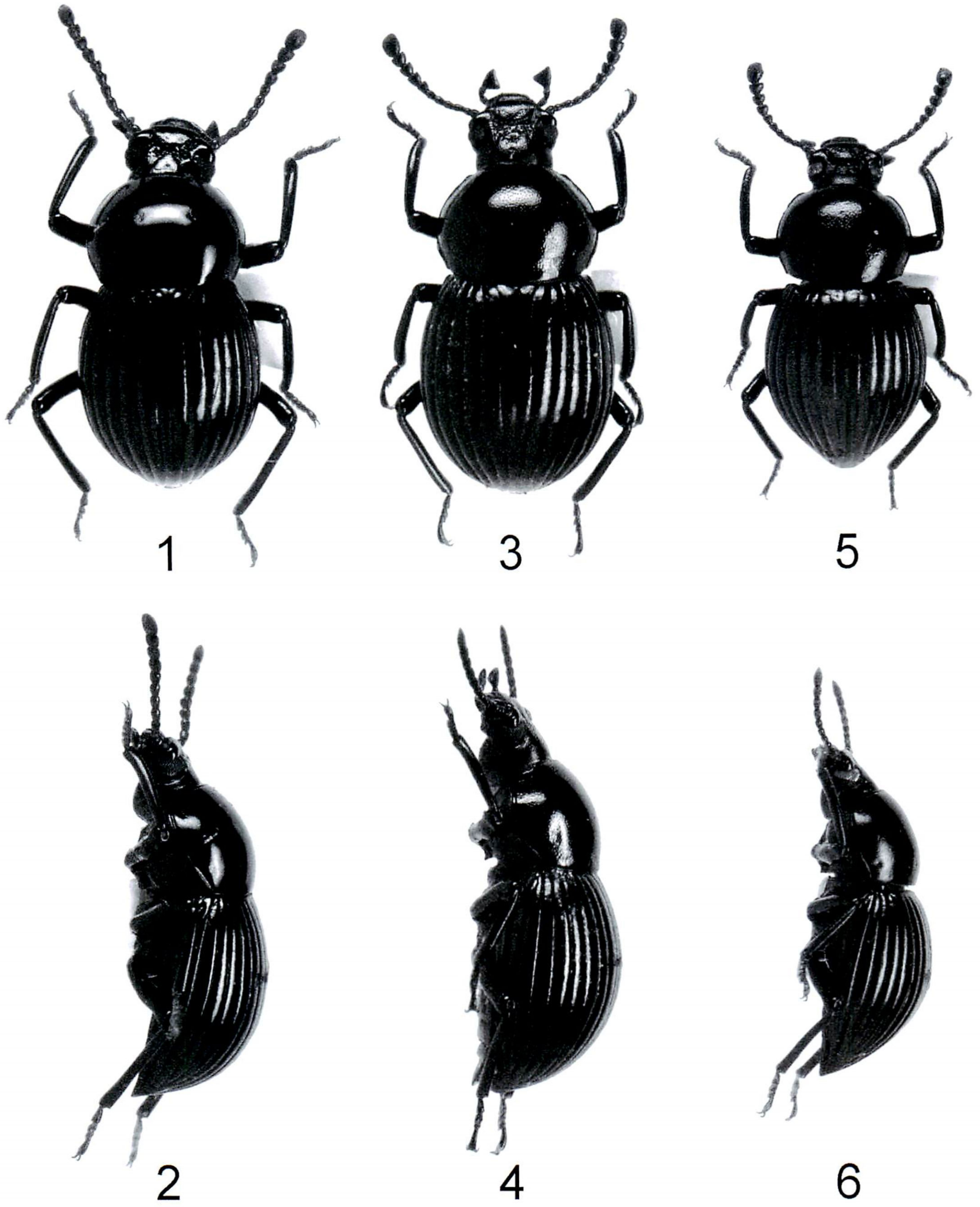
Body oblong-ovate, strongly convex, noticeably constricted between fore and hind bodies; head, pronotum, elytra, major parts of ventral side and legs piceous, basal parts of antennae, mouth parts, coxae and tarsi yellowish brown to reddish brown, apical parts of antennae brownish black; dorsal surface strongly, rather vitreously shining, ventral surface weakly, somewhat alutaceously shining; each surface mostly glabrous, apical parts of antennae with minute hairs, apico-ventral parts of tibiae with fine hairs, ventral sides of tarsi with tufts of fine hairs.

Male. Head rather transversely elliptical, gently inclined anteriad; clypeus obtrapezoidal, very weakly raised dorsad, scattered with microscopic punctures, bordered from genae to frons by deep sulcus, with apex weakly rounded and slightly more produced than genae; genae somewhat triangular, gently convex dorsad, scattered with microscopic punctures, with exterior margins oblique, feebly produced postero-laterad in areas before eyes; frons rather wide, gradually raised posteriad, sparsely scattered with microscopic punctures, sparsely and irregularly with large and coarse punctures in anterior parts, which are often fused with one another and become irregularly shaped foveae: diatone about 1.7 times wider than diameter of an eye. Eyes somewhat transverse, gently convex laterad, roundly inlaid into head, with grooves along interior margins on head. Antennae slightly clavate, reaching base of pronotum, terminal segment ovate and largest, ratio of the length of each segment from base to apex: 0.18, 0.10, 0.17, 0.16, 0.15, 0.13, 0.14, 0.15, 0.14, 0.14, 0.29.

Pronotum short barrel-shaped in dorsal view, 1.39 times as wide as long; apex nearly straight and bordered by a groove, very weakly sinuate in lateral parts; sides rather steeply declined to lateral margins, which are evenly rounded and strongly bordered by grooves; base not bordered by a groove but finely margined, feebly produced in lateral parts; front and hind angles obtusely angular; disc rather hemispherically convex, scattered with microscopic punctures, with a trace of the longitudinal median groove and a pair of shallow, rather round impressions at anterior 2/5. Scutellum lacking.

Elytra subovate, longer than wide (5 : 4), twice the length and 1.14 times the width of pronotum, widest at basal 2/5; dorsum strongly convex, highest at basal 2/5; disc 9-striated, each stria with fine punctures, which are sparsely set and do not invade intervals; in apical part, 1st stria straight to apex, 2nd and 3rd shortened and approximate with each other, 4th and 5th more noticeably shortened and also approximate with each other, 6th straight and nearly same length of 2nd, 7th straight and longer than 6th, 8th shortened, nearly same length as 3rd, and joining to 9th, 9th (=marginal stria) reaching apex; intervals microscopically punctate and weakly micro-aciculate, 1st interval to the 6th rather wide and convex (exterior intervals more strongly convex than the interiors), 7th narrow and strongly convex, 8th very narrow and forming exterior margin, 9th almost flat; humeri angular, without spine; apices produced posteriad.

Terminal segment of maxillary palpi nearly securiform, with curved outer side 1.30 times the length of the inner, and 0.74 times that of apical. Mentum subcordate, coriaceous and weakly wrinkled, sharply projected at the middle, membranous in anterior part, with weakly margined sides; gula triangular with rounded sides, smooth, bordered by impressions. Prosternum somewhat widely cordate, fused with proepisterna (the border visible), weakly covered with iso-



Figs. 1–6. *Rehumius* spp., ♂♂. —— 1–2, *R. becvari* sp. nov., holotype; 3–4, *R. andoi* sp. nov., holotype; 5–6, *R. schawalleri* sp. nov., holotype; 1, 3 & 5, dorsal view, 2, 4 & 6, lateral view.

diametric microsculpture, noticeably rimmed along apex, raised and subparallel between coxae, gently depressed in posterior part, with prosternal process bluntly produced at apex. Mesosternum very short, major anterior part being beneath prosternum, posterior part strongly raised and rather boldly V-shaped. Metasternum very short, rather smooth and weakly transversely wrinkled in middle, feebly shagreened in lateral parts, with a short longitudinal groove medially. Abdomen mostly smooth, scattered with microscopic punctures, each sternite with shallow impressions in lateral parts, which are covered with isodiametric microsculpture; anal sternite with posterior margin not bordered but simply gently produced.

Legs rather stout; femora becoming bolder in apical 2/5; tibiae weakly curved intero-ventrad, with interior faces finely haired in apical 2/5; tarsi rather compact, ratios of the lengths of pro-, meso- and metatarsal segments: 0.23, 0.11, 0.13, 0.09, 0.38; 0.24, 0.13, 0.13, 0.11, 0.36; 0.34, 0.13, 0.12, 0.40; claws distinctly falciform.

Male genitalia extremely elongate, 2.45 mm in length, 0.23 mm in width, basal piece constricted in anterior 1/3 in dorsal view, curved in middle in lateral view; fused lateral lobes prolonged fusiform, 0.81 mm in length, weakly curved in apical 2/5 in lateral view, with acute apex.

Body length: 5.5 mm.

Female. unknown.

Holotype: ♂, "THAILAND / Phuket, Umg. Surin / 5 – 10. XI 87 Heiss" (CB).

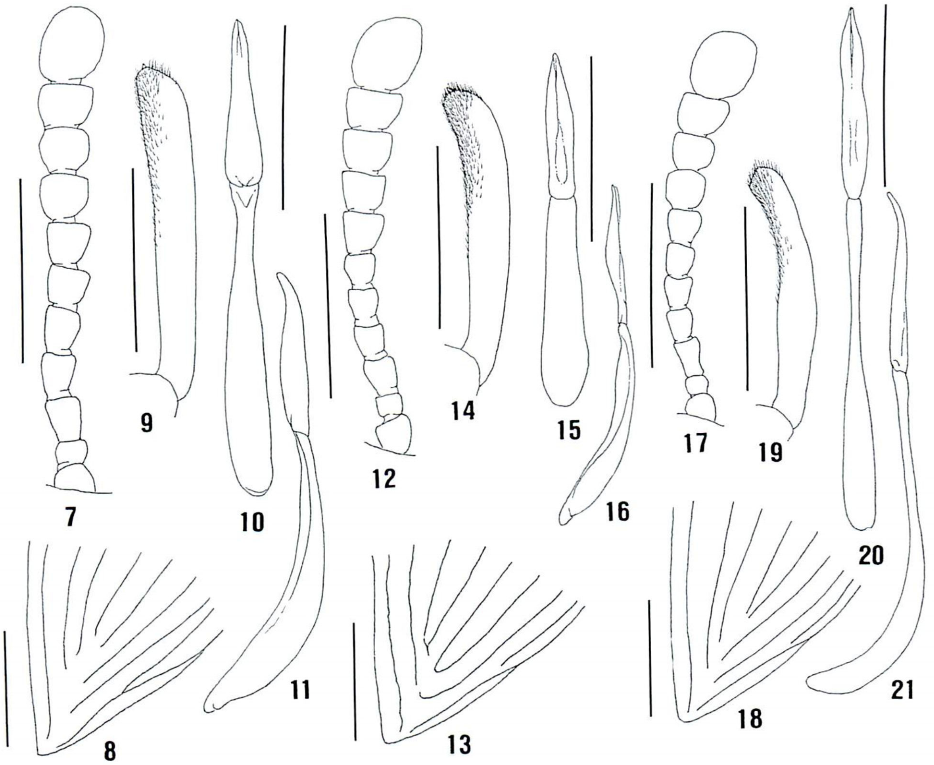
The specific name is given in honor of Ing. Stanislav BEČVÁŘ, who offered invaluable specimens to the present study.

## ***Rehumius andoi*** sp. nov.

(Figs. 3–4, 12–16)

Body subovate, strongly convex, remarkably constricted between fore and hind bodies; body almost piceous, basal parts of antennae, palpi and femora dark reddish brown, mouth parts and claws dark yellowish brown, gula pale brown, tufts of hairs on tarsi gray; head gently, very feebly sericeously shining, pronotum rather strongly, vitreously shining, elytra gently shining (less strongly shining than pronotum but more strongly so than head), femora, tibiae and dorsal sides of tarsi moderately shining, ventral side of head except gula dull, gula weakly, feebly sericeously shining, major part of prosternum and proepisterna coriaceous, central part of prosternum, meso- and metasterna alutaceous; abdomen rather strongly, vitreously shining; body almost glabrous, antennae and palpi with fine hairs, femora with intero-ventral faces haired in apical 1/3, tarsi with ventral side with tufts of fine hairs.

Male. Head rather transversely subhexagonal, weakly inclined anteriad, very feebly covered with isodiametric microsculpture; clypeus transversely hexagonal, inclined anteriad and postero-laterad, rather closely, irregularly scattered with small punctures, clearly bordered from genae by strong sulci, indefinitely bordered from frons by weak sulcus, with apex weakly rounded and slightly more produced than genae; genae somewhat triangular, rather strongly raised antero-laterad, closely, finely scattered with microscopic punctures, with exterior margins gently produced laterad, posterior parts of genae behind eyes weakly, roundly produced postero-laterad; frons rather wide, gradually raised posteriad, coarsely punctate, the punctures sometimes fused with one another and wrinkled in anterior part, rather closely, irregularly scattered with smaller punctures in posterior part; diatone about 2.5 times as wide as the diameter of an



Figs. 7– 21. Parts of *Rehumius* spp. ♂♂. —— 7–11, *R. becvari* sp. nov.; 12–16, *R. andoi* sp. nov.; 17–21, *R. schawalleri* sp. nov.; 7, 12 &17, antennae; 8, 13 & 18, apical parts of elytra; 10, 15 & 20, genitalia (dorsal view); 11, 16 & 21, genitalia (lateral view). Scales : 1 mm.

eye. Eyes transversely subovate, gently convex laterad, roundly, slightly obliquely inlaid into head, with grooves along interior margins extending to posterior parts of head. Antennae rather clavate, reaching basal 1/4 of pronotum, terminal segment subquadrate and largest, ratio of the length of each segment from base to apex: 0.26, 0.11, 0.22, 0.14, 0.14, 0.13, 0.18, 0.22, 0.23, 0.23, 0.43.

Pronotum short-barrel shaped in dorsal view, 1.33 times as wide as long, widest slightly behind the middle; apex feebly produced, very weakly sinuate in lateral parts, weakly bordered and finely rimmed, the border interrupted medially; sides rather steeply declined to lateral margins, which are rounded and strongly bordered by grooves; base slightly wider than apex, feebly roundly produced, not bordered by a groove but microscopically margined; front angles obtusely angular with corners slightly acute, hind angles obtusely angular with corners not acute; disc rather hemispherically convex, vaguely impressed at posterior 2/5 on each side, rather closely, feebly irregularly scattered with microscopic punctures, each with a minute, bent hair. Scutellum lacking.

Elytra subovate, 1.13 times as long as wide, 1.88 times the length and 1.22 times the width of pronotum, widest at basal 3/7; dorsum strongly convex, highest at basal 1/3; disc 9-striated, each stria with fine punctures, which are sparsely set and slightly invade intervals, interior striae narrower and shallower, exterior ones wider and deeper; in apical part, 1st stria straight to apex, 2nd and 7th shortened, approximate with each other, 3rd and 4th more noticeably shortened and fused with each other, 5th and 6th longer than 3rd and 4th, fused with each other, 8th shortened and near same length of 4th and 5th, 9th (marginal stria) straight to apex; intervals partly, very weakly covered with isodiametric mirosculpture, microscopically punctate, very weakly, rather transversely micro-aciculate, interior intervals rather wide and gently convex, exterior ones narrow and strongly convex, 8th narrowest and forming exterior margin, 9th almost flat; humeri angular; apices produced posteriad.

Terminal segment of maxillary palpi rather securiform, with gently curved outer side 1.60 times the length of the inner, and nearly same length of the apical. Mentum subcordate, coriaceous, rather noticeably projected in medio-longitudinal part, shallowly grooved on both sides, with lateral margins weakly rounded; gula somewhat equilateral triangular, rather smooth, feebly, transversely aciculate, microscopically punctate, with a pair of impressions near apex. Prosternum fused with proepisterna (the borders being traceable), coriaceous, rather longitudinally aciculate, noticeably rimmed along apex, longitudinally raised in middle, highest in area between coxae, rather steeply depressed in posterior part, with prosternal process triangularly produced at apex. Mesosternum very short, major anterior part being beneath prosternum, posterior part gradually raised in V-shape. Metasternum very short, rather smooth and wrinkled in middle, feebly alutaceous in lateral parts, noticeably, transversely impressed in posterior part on both sides. Abdomen rather smooth, very weakly covered with isodiametric microsculpture in lateral parts, rather longitudinally, sometimes irregularly, impressed in latero-basal parts of each sternite, scattered with microscopic punctures, which are often transverse; anal sternite with posterior margin not bordered but simply and gently produced.

Legs moderate in members of this genus; pro- and mesofemora becoming bolder to apical 2/5, metafemora gently bolder apicad; protibiae weakly curved interiad, with intero-ventral faces feebly gouged and finely haired in apical 1/3; mesotibiae weakly curved intero-ventrad, with intero-ventral face very feebly gouged and finely haired in apical halves; metatibiae nearly straight, with intero-ventral faces very weakly gouged and finely haired in apical 1/3; tarsi rather compact, ratios of the lengths of pro-, meso- and metatarsal segments: 0.20, 0.11, 0.12, 0.09, 0.31; 0.21, 0.12, 0.13, 0.12, 0.38; 0.26, 0.14, 0.11, 0.52; claws distinctly falciform.

Male genitalia strongly prolonged fusiform, 1.81 mm in length, 0.26 mm in width, basal piece elongated ovate in dorsal view, rather strongly curved in middle in lateral view; fused lateral lobes elongated fusiform, 0.78 mm in length, with acute apex.

Body length: 7.2 mm.

Female. unknown.

Holotype: ♂, "THAILAND : 19–25.4. / SSE Bangkok: 2003 / S. Pattaya: Jomptien: // Pinnacle Resort Hotel. / J. SCHÖNFELD leg. (16)" (SMNS).

The specific name is given in honor of Dr. Kiyoshi ANDO, who is a Japanese representative specialist of Tenebrionidae, and described a species of this genus in the past.

## ***Rehumius schawalleri*** sp. nov.

(Figs. 5–6, 17–21)

Body oblong-ovate, strongly convex, noticeably constricted between fore and hind bodies; head, pronotum, apical parts of antennae, femora and tibiae brownish black, elytra and major parts of ventral surface dark brown, several basal segments of antennae, mouth parts and tarsi yellowish brown, hairs on mouth parts and tufts of hairs on tarsi pale yellowish brown; head weakly, rather sericeously shining, pronotum and elytra gently shining, pro-, meso- and metasterna almost mat, abdomen alutaceously shining; head and pronotum with very minute hairs, elytra, pro-, meso- and metastena glabrous, antennae and palpi with fine hairs, femora with intero-ventral faces haired in apical 1/3, tarsi with ventral side with tufts of fine hairs.

Male. Head rather transversely octagonal, gently inclined anteriad, covered with isodiametric microsculpture; clypeus semicircular, very weakly raised, rather irregularly scattered with small punctures, strongly bordered from genae and frons, with apex weakly rounded and more strongly produced than genae; genae somewhat triangular, gently raised antero-laterad, rather closely scattered with microscopic punctures, with exterior margins oblique in anterior 2/3, then curved and subparallel in posterior 1/3 in areas before eyes, posterior parts of genae behind eyes weakly, roundly produced postero-laterad; frons rather wide, gradually raised posteriad, coarsely punctate, the punctures fused with one another in anterior part, forming longitudinal foveae, and rather closely, irregularly scattered with smaller punctures in posterior part; diatone about 2.3 times as wide as the diameter of an eye. Eyes transversely subovate, gently convex laterad, roundly inlaid into head, with grooves along interior margins extending to posterior parts of head. Antennae rather clavate, barely reaching base of pronotum, terminal segment subquadrate and largest, ratio of the length of each segment from base to apex: 0.26, 0.10, 0.21, 0.17, 0.15, 0.14, 0.17, 0.24, 0.23, 0.24, 0.37.

Pronotum short-barrel shaped in dorsal view, 1.25 times as wide as long, widest at the middle; apex nearly straight, very weakly sinuate in lateral parts, bordered, the border interrupted medially; sides rather steeply declined to lateral margins, which are evenly rounded and strongly bordered by grooves; base slightly wider than apex, feebly roundly produced, not bordered by a groove but very finely margined; front angles obtuse with rounded corners, hind angles obtusely angular, with acute corners; disc rather hemispherically convex, spot-likely impressed at posterior 2/5 on each side, weakly covered with isodiametric mirosculpture, rather closely, somewhat irregularly scattered with microscopic punctures, each with a very minute, bent hair. Scutellum lacking.

Elytra subovate, 1.16 times as long as wide, 1.92 times the length and 1.26 times the width of pronotum, widest at basal 2/5; dorsum strongly convex, highest at basal 2/5; disc 9-striated, each stria with fine punctures, which are sparsely set and slightly invade intervals, interior striae narrower and shallower, exterior ones wider and deeper; in apical part, 1st stria straight to apex, 2nd and 6th shortened, approximate but not fused with each other, 3rd more noticeably shortened, 4th and 5th most shortened, also approximate but not fused with each other, 7th nearly straight, seemingly being marginal striae, 8th shortened, nearly same length of 5th, 9th (=marginal stria) reaching apex; intervals covered with isodiametric mirosculpture, microscopically punctate, very weakly, rather transversely micro-aciculate, interior intervals rather wide and gently convex, exterior ones narrow and strongly convex, 8th narrowest and forming exterior margin, 9th almost flat; humeri angular; apices produced posteriad.

Terminal segment of maxillary palpi somewhat cup-shaped with gently curved outer side 1.26 times the length of the inner, and 0.83 times that of apical. Mentum obtrapezoidal, coriaceous, subconical at the middle, grooved on both sides, with lateral margins weakly rounded; gula subparabolic, rather smooth, feebly, transversely aciculate, with a pair of impressions near apex. Prosternum fused with proepisterna, coriaceous, rather transversely aciculate, noticeably rimmed along apex, longitudinally raised in middle, highest in area between coxae, gently depressed in posterior part, with prosternal process bluntly produced at apex. Mesosternum very short, major anterior part being beneath prosternum, posterior part strongly raised and rather boldly V-shaped. Metasternum very short, rather smooth and wrinkled in middle, feebly alutaceous in lateral parts, with a very short longitudinal groove on the median line. Abdomen rather smooth, very weakly covered with isodiametric microsculpture, scattered with microscopic punctures, which are often transverse; anal sternite with posterior margin not bordered but simply and gently produced.

Legs rather stout; femora becoming bolder at apical 2/5; protibiae weakly curved interiad, with intero-ventral faces feebly gouged and finely haired in apical halves; mesotibiae weakly curved intero-ventrad, with intero-ventral face feebly gouged and finely haired in apical halves; metatibiae rather simple, with intero-ventral faces finely haired in apical 1/3; tarsi rather compact, ratios of the lengths of pro-, meso- and metatarsal segments: 0.21, 0.11, 0.12, 0.11, 0.33; 0.23, 0.12, 0.13, 0.14, 0.32; 0.24, 0.14, 0.12, 0.32; claws distinctly falciform.

Male genitalia extremely slender, 2.66 mm in length, 0.22 mm in width, basal piece elongated ovate in basal 2/5, constricted and narrowed in anterior 3/5 in dorsal view, rather strongly curved in basal half, gently so in anterior half in lateral view; fused lateral lobes strongly prolonged fusiform, 0.94 mm in length, with acute apex.

Body length: 5.7-8.9 mm.

Female. Body larger; antennae shorter, reaching basal 1/4 of pronotum; protibiae with intro-ventral faces not gouged.

Holotype: ♂, "THAILAND : Ko Chang, / Westseite, 1999, leg. / A. SCHULZ & K. VŏCK" (SMNS). Paratypes: 2♀♀, same date as the holotype.

The specific name is given in honor of Dr. Wolfgang SCHAWALLER, who provided the present authors with a series of the type materials.

## Key to the Species of the Genus *Rehumius*

1(6) Pronotum lacquer-like shine, without distinguishable punctation. ······················ 2
2(3) Smaller (5.5 mm), pronotum 1.39 times as wide as long; Thailand (Phuket). ··························· *R. becvari* sp. nov.
3(2) Larger (9.5 - 11 mm), pronotum less than 1.22 times wider than long. ··················· 4
4(5) Elytra with internal intervals flat, the external ones gradually rather convex, longitudinal striae fine and finely punctate, 3rd stria and the 4th, and 5th stria and the 6th combined in declivity, pronotum with anteriror part of the middle not margined, body with legs and antennae brownish red; 11 mm; Malaysia (Perak). ················ *R. perakensis* KASZAB
5(4) Elytra with interior intervals feebly, the exterior strongly convex, longitudinal striae deep and interior ones not punctate, 3rd stria and the 6th combined in declivity; pronotum with anterior part sharply margined, body dark brown, legs and antennae reddish yellow: 9.5 mm; Malaysia (Kuala Lumpur). ········································· *R. biroi* (KASZAB)
6(1) Pronotum without lacker-like shine, weakly or strongly punctate. ························ 7
7(10) Pronotum rather strongly or gently shining. ················································ 8
8(9) Body almost piceous, pronotum rather strongly shining, elytra, in apical part, 3rd stria

and 4th, 5th and 6th fused with each other ; 7.2 mm ; Thailand (Pattaya) . ·················· *R. andoi* sp. nov.

9(8) Elytra dark brown, tarsi yellowish brown, pronotum gentry shining, elytra in apical part, 3rd stria and 4th, 5th and 6th not fused with each other; 5.7–8.9 mm; Thailand (Ko Chang). ·················· *R. schawalleri* sp. nov.

10(7) Pronotum mostly shagreened or mat, rarely shining, weakly or strongly punctuate, more than 1.22 times wider than long. ·················· 11

11(12) Elytra rather more than twice as long as pronotum, and almost 1.2 times as long as wide, striae sharp, narrow and impunctate; intervals flat, only slightly convex in apical part, pronotum extremely finely and very sparsely punctrate, body with legs blackish brown; 10.7 mm; Laos (Paské) . ·················· *R. misolampoides* Kaszab

12(11) Elytra less than twice the length of pronotum; intervals always convex.·················· 13

13(14) Pronotum with sides of evenly curved, not so wider than long, front and hind angles obtusely angular, but prosternum between legs straight, the end in side aspect rectangular; pronotum very finely and weakly punctate, disc alutaceous; elytra with longitudinal striae deep, intervals strongly convex, striae seemingly without row of punctures, body-with legs and antennae reddish brown; 8.2 mm; Malaysia (Penang). ·················· *R. laevior* Fairmaire

14(13) Pronotum with sides remarkably strongly curved, strongly narrowed anteriad and posteriad, front and hind angles almost rounded, rather 1.3–1.4 times as wide as long; body with legs and antennae black.·················· 15

15(16) Body shining, pronotum coarsely and very densely punctate, surface not shagreened; head with frons coarsely and rugosely punctate, otherwise the punctation fine, simple and dense; elytra with longitudinal striae sharp, bearing remarkable, chain-like on sides, weak punctation; anterior part of pronotum in the middle also not with weakly punctation. 6–7 mm. Laos (Hat Chena), Thailand (Sakaerat) .·················· *R. laticollis* Pic

16(15) Pronotum shagreened and mat among fine punctation, elytra also at least alutaceous.·················· 17

17(18) Pronotum finely and densely punctate, 1.30–1.34 times as wide as long, elytra 1.28 times as long as wide, 2.05 times longer than pronotum, elytral striae without chain-like punctation; 7.4–8.7 mm. W. Thailand (Kanchanaburi, Sai Yok). ·················· *R. masumotoi* Ando

18(17) Pronotum sparsely punctate, 1.4 times as wide as long, elytra with chain-like punctation.·················· 19

19(20) Chain-like punctation of elytral striae with very fine, the striae not crossed, intervals convex, particularly in apical part, pronotum evenly and finely, sparesely punctate, the surface coarsely shagreened, pronotum slightly more than 1.4 times as wider as long, with sides noticeably slightly curved, longitudinal swelling slighter; 7–11 mm; Cambodia (Pnom Penh), Laos (Paksé, Pakxiang), Vietnam (Saigon, Dien Hoa). ·················· *R. amplithorax* Fairmaire

20(19) Chain-like punctation of elytral striae remarkable and striae a little crossed, pronotum somewhat more than 1.4 times as wide as long, sides remarkably widely curved and strongly narrowed towards bases. ··················21

21(22) Dorsal surface coarsely isodiametrically shagreened, therefore, dorsal surface mat, elytra obviously elongate, 1.18 times as long as wide; 6.8–7.4 mm; Laos (Wapi) . ·················· *R. laosensis* Kaszab

22(21) Dorsal surface finely weakly isodiametrically shagreened, therefore, rather shinny, pronotal punctures finer; elytra obviously shorter, 1.15 times as long as wide; 6.4 mm; Vietnam (Binh tri thien). ............................................ *R. micros* (KASZAB)

## 要　　約

益本仁雄・秋田勝己：タイ産ゴミムシダマシ科 *Rehumius* 属の新種. ——— ニジゴミムシダマシ亜科 (Stenochiinae), ニジゴミムシダマシ族 (Cnodalonini), *Rehumius* 属は，インドシナからマレー半島にかけて，9種が知られていた．今回，筆者らはこの属を検討した結果，タイ産の3新種を見出し，*R. becvari* sp. nov., *R. andoi* sp. nov., *R. schawalleri* sp. nov. と命名記載した．さらに，これに全12種の検索表を付した．

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# A New Record of *Passandra okinawana* (Coleoptera: Passandridae) from Ishigaki-jima Is, the Ryukyus

Shûhei YAMAMOTO
c/o M. Maruyama, The Kyûshû University Museum, Hakozaki 6-10-1,
Fukuoka, 812–8581 Japan

Recently, AOKI (2008) described a new species *Passandra okinawana* for the populations that had been erroneously identified as "*P. trigemina* (NEWMAN, 1839)." It has been recorded from the islands of the Ryukyus, Southwest Japan, namely Miyako-jima, Kuro-shima, Taketomi-jima and Hateruma-jima (AOKI, 2008).

Through the courtesy of Mr. Reo ITO, I had a chance to examine an individual collected on Ishigaki-jima Is., the Ryukyus, which coincides with the paratypes of *P. okinawana*.

In the present paper, I am going to record this species for the first time from Ishigaki-jima Is.

## ***Passandra okinawana*** AOKI, 2008

*Specimen examined.* JAPAN: Yaeyama archipelago (Ryukyus). 1ex., Fukai [桴海], Ishigaki-jima Is., 11. IV. 2009, R. ITO leg. (deposited in the ITO's collection).

*Distribution.* JAPAN: Ryukyus: (Miyako-jima Is., Kuro-shima Is., Taketomi-jima Is., Hateruma-jima Is., Ishigaki-jima Is.). New record from Ishigaki-jima Is.

*Remarks.* The specimen was attracted by an outdoor lamp. It indicates that this species has positive phototaxis such as the congeners.

I wish to express my hearty thanks to Mr. Reo ITO (Kyushu University) for his kindness in providing me the opportunity to examine the above-mentioned specimen. My thanks are also due to Dr. Jun-ichi AOKI (Tokyo) for his kind advice and to Dr. Munetoshi MARUYAMA (Kyushu University Museum) for his critical reading on this draft.

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*Entomological Review of Japan*, **64** (1): 95–99

# A New Species of *Onthophagus* (*Parascatonomus*) from Sumba, Nusa Tenggara, Indonesia (Coleoptera: Scarabaeidae)

Teruo OCHI
Kôhûdai 5–21–6, Toyono-cho, Toyono-gun, Osaka, 563–0104 Japan

Masahiro KON
School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522–8533 Japan

and
Sri HARTINI
Zoology Division, Research Center for Biology, LIPI, Bogor, Indonesia

**Abstract** A new species of *Onthophagus* (*Parascatonomus*) is described from Sumba, Nusa Tenggara, Indonesia under the name of *O.* (*P.*) *takakui* sp. nov.

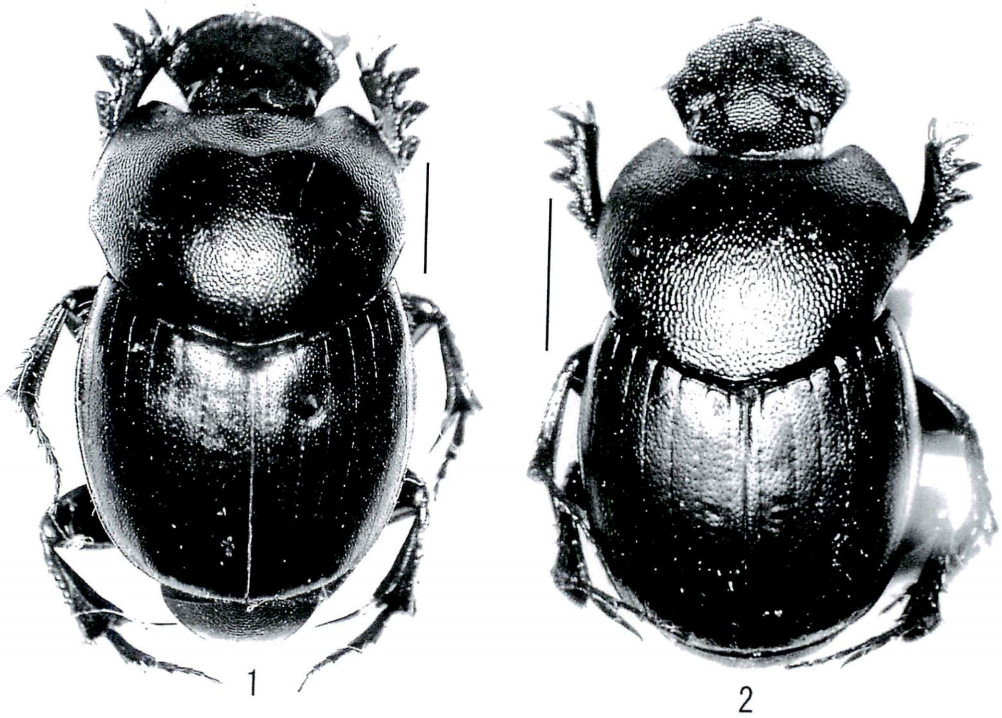
KRIKKEN & HUIJBREGTS (2008) described a subspecies of *Onthophagus* (*Parascatonomus*) *accedens* LANSBERGE from Lombok and Flores, Nusa Tenggara, Indonesia under the name of *O.* (*P.*) *accedens nusatenggaricus*. When we examined *Onthophagus* specimens collected from Sumba, Nusa Tenggara, we found an *Onthophagus* species closely related to *O.* (*P.*) *accedens* but distinct from both *O.* (*P.*) *accedens accedens* and *O.* (*P.*) *accedens nusatenggaricus* in several characters. Thus, we describe it as a new species. The holotype is deposited in the collection of the Zoology Division, Research Center for Biology, LIPI, Bogor, Indonesia. In addition, we upgrade the taxon *nusatenggaricus* to species rank because it is distinct from *O. accedens accedens* from Java in external morphology and male genitalia. We follow OCHI, T., M. KON & BARCLAY (2008) for the terminology regarding male genitalia and metasternum.

## ***Onthophagus* (*Parascatonomus*) *takakui* sp. nov.**

(Figs. 2 & 4)

Length: 6.9–10.5 mm; width: 3.8–5.7 mm (n=96).

Body moderate-sized, oval, strongly convex and deeply constricted between pronotum and elytra; dorsal side opaque, almost glabrous at a glance, though in reality elytra sparsely clothed with minute hairs; ventral side shining, partly clothed with recumbent yellowish hairs. Color black with weak purplish luster, especially on head and pronotum; mouth parts, palpi, and legs



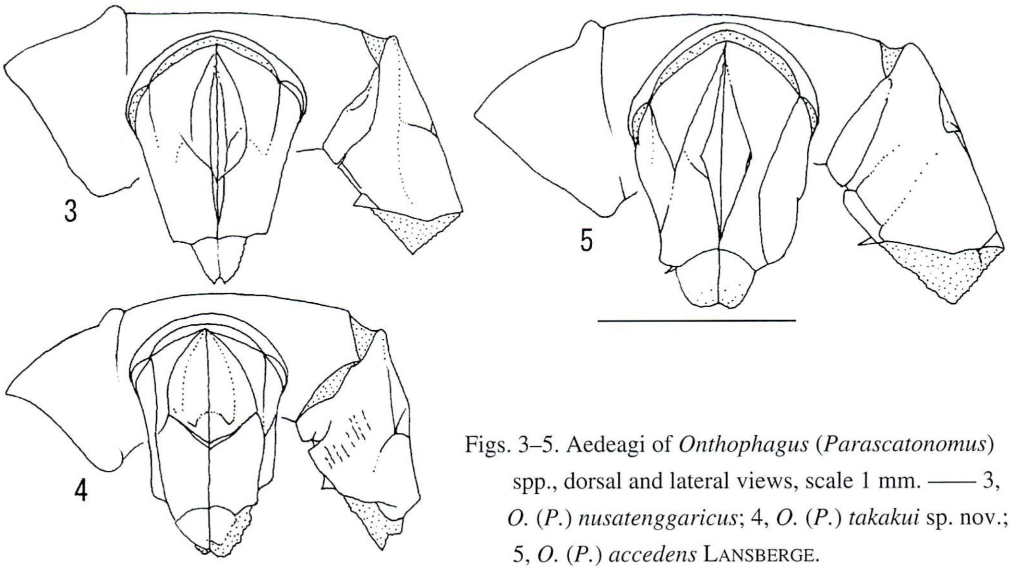
Figs. 1–2. Habitus of *Onthophagus* (*Parascatonomus*) spp., scale 2 mm. —— 1, *Onthophagus* (*Parascatonomus*) *nusatenggaricus* KRIKKEN et HUIJBREGTS; 2, *O.* (*P.*) *takakui* sp. nov.

dark reddish brown; antennae with foot-stalk reddish brown, club segments yellowish brown, sometimes a little darker.

Male. Head pentagonal; clypeus strongly produced forward as a reflexed and triangular tooth in the middle, the basal sides of the tooth not incised; clypeal margin broadly bordered and reflexed; frontoclypeal suture usually entirely effaced; genal sutures distinct, not carinate and conjointed with frontoclypeal one far from margin; genae strongly produced laterad, with genal margin roundly angled at the middle; vertex with a small tubercle at the middle; surface wholly and densely covered with granules. Antennae short and compact; scape short, invisible from dorsal aspect.

Pronotum strongly convex, about 1.4 to 1.5 times as wide as long (n=3); anterior margin deeply emarginate, clearly bordered; lateral margins evenly rounded in front, sinuate behind, finely bordered; basal margin obtusely angled at the middle, bordered by a fine marginal line, which is effaced laterally near either posterior angle; anterior angles strongly produced forward, roundly angled at apex; posterior angles rounded; disc shallowly and semicircularly depressed at the middle behind anterior margin; surface closely covered with granules.

Elytra about 1.3 to 1.4 times as wide as long (n=3); striae strongly grooved and clearly ridged throughout on both sides; strial punctures sparse and moderately strong, slightly notching either margin of intervals; intervals flat, strongly micro-granulose, sparsely covered with small asperate punctures, which are gradually becoming larger and deeper toward outer intervals, the punctures slightly larger and denser than those of *O. accedens*.



Figs. 3–5. Aedeagi of *Onthophagus* (*Parascatonomus*) spp., dorsal and lateral views, scale 1 mm. —— 3, *O.* (*P.*) *nusatenggaricus*; 4, *O.* (*P.*) *takakui* sp. nov.; 5, *O.* (*P.*) *accedens* LANSBERGE.

Pygidium rather narrow, gently convex, carinate at base, transversely wrinkled and densely covered with transverse ocellate punctures. Prothorax with anterior angles distinctly excavated in the middle on the ventral side, the excavation generally slightly shallower than *O. accedens*. Metasternum clearly convex; MT-elevation rather obtuse, with the distal end of the elevation weakly produced forward, and then gently declivous antero-laterally; a small transverse groove prior to the anterior end of MT-elevation distinct; median portion weakly and longitudinally grooved along midline in basal third, and then very slightly and finely raised toward apex, somewhat densely covered with shallow punctures in the middle, the punctures becoming denser and asperate toward apex. Protibiae relatively slender, gently incurved, with four external teeth; outer margin with small and sharp denticles between the external teeth; terminal spur rather spatulate, slightly decurved and pointed at apex.

Aedeagus moderate-sized. Phallobase rather elongate, about 1.7–1.8 mm in length (n=2), about 0.8 mm in apical width (n=2). Parameres relatively large, quadrate in outline from dorsal view, about 1.0–1.1 mm in length (n=2); baso-lateral elevation short; baso-lateral tooth distinct; medio-lateral notch deep and rather narrow; apico-lateral tooth distinct but not produced; apical tooth sharply produced and well visible from lateral view.

Female. Protibiae with four external teeth stronger than in the male; terminal spur ordinary, distinctly decurved. Pygidium transverse and broader.

*Type series*. Holotype: ♂, Lewa, Sumba Is., Indonesia, 1~5. II. 2001. Paratypes: 27♂♂, 35♀♀, the same data as for the holotype; 5♀♀, ditto, 3. V. 2001; 5♂♂, 5♀♀, ditto, 7~9. II. 2001, 1♂, 2♀♀, Luku Melolo, 7~9. II. 2001; 7♂♂, 8♀♀, Tarimbang, South Coast, Sumba Is., 1~3. II. 2001.

*Distribution*. Sumba (Nusa Tenggara, Indonesia).

*Etymology*. The present species is named in honor of Dr. Gen TAKAKU, Hokkaido University of Education, who has been one of indispensable collaborators of the last author.

*Notes*. The present new species is closely related to *Onthophagus* (*Parascatonomus*) *accedens* from Java, but can be distinguished from the latter by the following characteristics: 1) body is much smaller; 2) head and pronotum are tinged with weak purplish luster, whereas in *O. accedens*, they are uniformly black and completely devoid of metallic luster; 3) clypeal margin is not incised on either side of the median tooth, whereas in *O. accedens*, it is distinctly incised on either side of the median tooth; 4) head and pronotum are more roughly and more densely granulate; 5) intervals of elytra are more densely covered with stronger asperate punctures, especially remarkable on outer intervals; 6) aedeagus are much smaller, the parameres are quite different-shaped in the dorsal and lateral view (see Figs. 4 & 5).

### ***Onthophagus* (*Parascatonomus*) *nusatenggaricus* Krikken et Huijbregts**

(Figs. 1 & 3)

*Onthophagus* (*Parascatonomus*) *accedens nusatenggaricus* Krikken et Huijbregts, 2008, J. Nat. Hist., 42 (43–44): 2741.

*Specimens examined*. 3♂♂, 1♀, Lombok, 860 m alt., 19. XI. 2005, S. Hartini leg.

*Notes*. This species was described as a subspecies of *O.* (*P.*) *accedens*. However, this species is distinct from the latter in the following points: The clypeal median tooth of head is not incised on either side, the vertexal tubercle is clearly weak, the antero-median portion of pronotum is broadly and shallowly hollowed instead of being narrowly and semicircularly depressed, the body is much smaller and both phallobase and parameres of male genitalia are distinctly smaller than those of *O. accedens*, the apico-lateral tooth is obviously short in ventral view.

## Acknowledgments

We wish to express our cordial thanks to Mr. P. Schoolmeesters for literatures. This study was supported in part by a Grant-in-Aid from the Japan Society for the Promotion of Science (No. 17405011).

## 要　　約

越智 輝雄・近　雅博・Sri Hartini：インドネシア・ヌサテンガラ，スンバの *Onthophagus* 属（*Parascanonomus* 亜属）の1新種．——— 小スンダ列島のスンバワ島から，エンマコガネ属のツヤエンマコガネ亜属の1新種 *O. takakui* sp. nov. を記載した．また，2008年にロンボック島から *O. accedens* Lansberge の亜種で記載された *O. nusatenggaricus* Krikken et Huijbregts stat. nov. について，外部形態及び交尾器に *O. accedens* とは明瞭な差が認められるので種に昇格させた．

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*Entomological Review of Japan*, **64**(1): 101–105

# A New Species of the genus *Ochicanthon* from Sumatra (Coleoptera: Scarabaeidae)

Teruo OCHI
Kôhûdai 5–21–6, Toyono-cho, Toyono-gun, Osaka, 563–0104 Japan

Masahiro KON
School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522–8533 Japan
and

Sri HARTINI
Zoology Division, Research Center for Biology, LIPI, Bogor, Indonesia

**Abstract** A new species of the genus *Ochicanthon* are described from Sumatra under the name of *O. vazdemelloi* sp. nov.

The genus *Ochicanthon* VAZ-DE-MELLO (Scarabaeidae, Canthonini) is distributed in South and Southeast Asia (VAZ-DE-MELLO, 2003). KRIKKEN and HUIJBREGTS (2007) reviewed the Sundaland species of this genus and recognized a total of 23 species. The highest species diversity of this genus is recorded in Borneo (OCHI et al. 2006; KRIKKEN & HUIJBREGTS, 2007). In contrast, only one species, *O. karasuyamai* OCHI, KON et KAWAHARA., has been known from Sumatra.

When we examined a series of dung beetle specimens collected from West Sumatra, we found specimens of *Ochicanthon* species closely related to *O. karasuyamai* but distinct from the latter. After a close examination and comparisons, we concluded that this form is new to science, and we describe it as a new species. The holotype is deposited in the collection of the Zoology Division, Research Center for Biology, LIPI, Bogor, Indonesia.

## *Ochicanthon vazdemelloi* sp. nov.
(Figs. 1–5)

Length: 5.9–8.3 mm; width: 3.7–5.2 mm (n=24).

Body large-sized, somewhat broadly oval, not so strongly convex dorsally; dorsal side strongly mat, sparsely clothed with very minute recumbent yellowish white hairs, except for almost glabrous head; ventral side also mat though rather lustrous on the median portion of metasternum, sparsely clothed with similar hairs to those on dorsum. Color black to blackish brown, partly tinged with very slight greenish to purplish luster. Head blackish brown, with

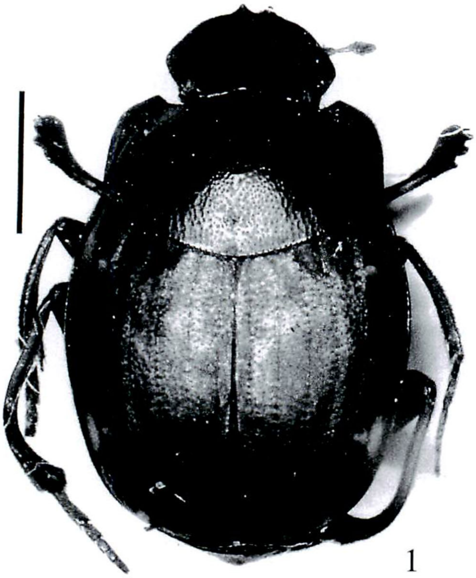


Fig. 1. Habitus of *Ochicanthon vazdemelloi* sp. nov., scale 2 mm.

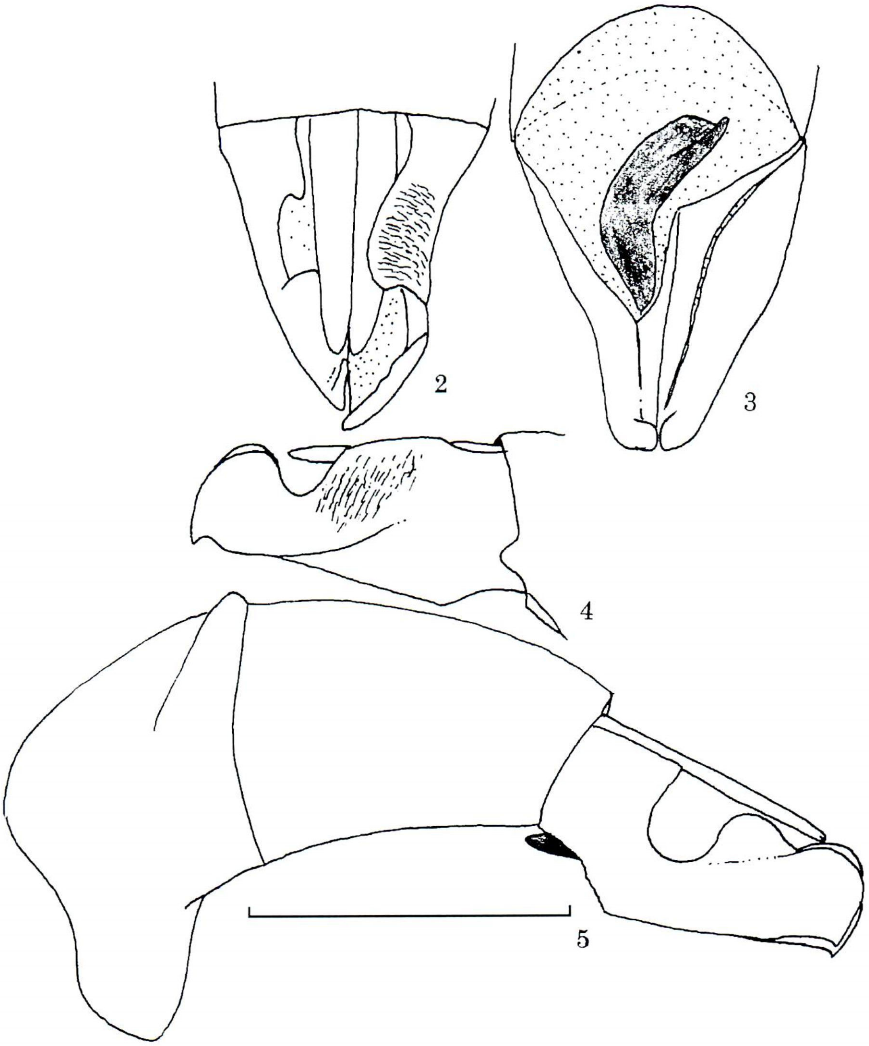
anterior margin slightly reddish, mouth parts, palpi and antennal foot-stalks reddish brown, antennal club segments dark brown. Pronotum entirely black. Elytron almost blackish brown, decorated with three small yellowish brown patches as follows: a latero-basal one extending from 5th to 7th intervals, a latero-post-median one also extending from 5th to 7th intervals, and an apical one extending from 2nd to 7th intervals; three patches mostly more or less partly constricted or reduced, especially the post-median and apical ones mostly so. Pygidium black to reddish brown, with a few small vague reddish or yellowish patches. Legs: protibiae and all femora rather reddish. Abdomen black, frequently with each sternite bearing a small round yellowish brown spot on either side.

Male. Head transverse; clypeus strongly produced forward, deeply and rather widely notched at the middle, with a reflexed and sharp tooth on either side of the notch; frontoclypeal suture completely effaced; genal suture finely defined; genae strongly produced laterad, with genal corner obtusely angled at the middle; surface strongly micro-granulose, weakly wrinkled on clypeus, very densely and partly confluently covered with small annular punctures, the punctures becoming sparser toward vertex, and also clearly smaller toward apex. Eyes small, interspace between eyes about 6.2–6.4 times as wide as the width of an eye (n=3).

Pronotum moderately to rather strongly convex, about 1.7–1.8 times as wide as long (n=3); anterior margin emarginate, with marginal line finely bordered; lateral margins angled at apical fourth, and then straightly and slightly diverging toward posterior angles, with marginal line finely bordered; basal margin widely and evenly rounded, with marginal line very fine; disc with a strong longitudinal carina near each posterior angle along lateral margin, the carina extending from base over posterior third, and then another strong longitudinal carina developed anteriad; surface strongly micro-granulose and slightly wrinkled laterad, densely covered with small annular punctures, the punctures becoming denser, larger and elongate toward sides.

Elytra weakly convex, about 1.2 times as wide as long (n=3); striae rather wide, somewhat deeply and strongly grooved; strial punctures strong, slightly but distinctly notching both margins of intervals; intervals flat, weakly and partly uneven, lightly and transversely wrinkled, strongly micro-granulose, sparsely covered with fairly small punctures, which are clearly smaller than those on pronotum.

Pygidium fairly strongly and longitudinally raised before apex along midline, strongly micro-granulose, rather closely covered with small annular punctures. Metasternum shining; metasternal shield densely covered with rather small annular punctures, the punctures becoming somewhat sparser and larger toward base; lateral portions sparsely covered with elongate annular or crescent-shaped punctures. Abdomen: all sternites strongly and transversely micro-



Figs. 2–5. Male genitalia of *Ochicanthon vazdemelloi* sp. nov., scale 1 mm. 2–4, parameres; 2, dorsal view, 3, ventral view, 4, left lateral view. 5; aedeagus, right lateral view.

strigose; 1st to 4th sternites bearing two or three transverse rows of small setiferous annular punctures along basal margin as well as in *O. karasuyamai*; 5th and 6th wholly covered with small punctures, though the latter becoming clearly larger than those on the other sternites. Profemora each with anterior edge bearing a sharp strong tooth at 3/4 from base. Mesofemora simple, gently swollen at the middle, slightly shining, and somewhat closely covered with transverse shallow punctures. Metafemora shining and somewhat closely covered with transverse shallow punctures; posterior edge strongly broadened with an obtuse tooth at basal 1/4. Protibiae strongly and rather evenly incurved, with three external teeth, 1st tooth fairly sharp, 2nd also sharp and almost the same length as 1st, 3rd sharp, slightly smaller; the remaining margin arranged with small and close denticles; inner distal end slightly produced and decurved, with apex rounded. Mesotibiae rather short, stout and weakly curved; mesotarsi rather short, with the basal segment

0.55 to 0.73 mm in length (n=3), 0.20 to 0.24 mm in width, and about 2.8 to 3.0 times as long as wide (n=3). Metatibiae slender and strongly curved inward in the apical half, with inner distal portion slightly produced as a sharp tooth near apex, which is clearly situated further before inner distal end than in *O. karasuyamai,* especially noticeable in medium-sized individuals; metatarsi with the basal segment 0.60 to 0.66 mm in length (n=3), 0.20 to 0.24mm in width (n=3), and about 2.8 to 3.0 times as long as wide (n=3).

Aedeagus large-sized though distinctly stouter than those of *O. karasuyamai*, with phallobase about 1.7 mm in length, about 0.9 mm in apical width (n=2). Parameres about 1.0 mm in length (n=2), robust in lateral view; in dorsal view, clearly asymmetrical, and not crossing at apices; dorsal portion with a pair of well developed and elongate sharp processes, which are arising from each paramere at base; dorsal membraneous parts narrow, not developed in dorsal view; the right paramere almost the same length as left one (slightly shorter than left one in dorsal view), with dorsal portion deeply and roundly emarginate near base; the left paramere with dorsal portion rather shallowly and roundly emarginate near apex, dorso-median portion closely micro-sculptured; the left paramere with strong ventral tooth which is short and obliquely produced, though not sharp at base.

Minor male. Metatibiae not so strongly incurved, with inner distal end not distinctly toothed.

Female. Head with clypeal two teeth more strongly produced forward than in male. Profemora with simple anterior edge. Metafemora somewhat slender, about 3.9 times as long as wide (n=1), strongly and distinctly broadened from base to the middle, and the broadest near the middle. Protibiae more strongly broadened toward apex and less incurved than in the male, with three external teeth, 1st tooth sharper and rather larger than male; apical inner end almost simply formed. Metatibiae ordinary, weakly curved, with inner edge almost simple.

*Type series.* Holotype: ♂, Mt. Singgalang, 500–1,000 m alt., Annai Valley, West Sumatra, Indonesia, IV. 2005. Paratypes: 4♂♂, 18♀♀, ditto.

*Type depository.* The holotype is preserved in the collection of Zoology Division, Research Center for Biology, LIPI, Bogor, Indonesia.

*Notes.* The present new species is very closely related to *Ochicanthon karasuyamai* from North Sumatra, but can be distinguished from the latter by the following characteristics: 1) antero-lateral portion of the pronotum is mostly weakly wrinkled, and very densely and partly confluently punctate, where the outlines of most punctures are indistinct, whereas in *O. karasuyamai*, it is not wrinkled, and somewhat densely punctate, where the outlines of most punctures are distinct and independent; 2) in fresh individuals, head and pronotum are more strongly matt, whereas in *O. karasuyamai*, they are only slightly shining; 3) in male, metatibia has a slight sharp tooth which is situated further before the inner distal end, whereas in *O. karasuyamai*, the slight sharp tooth is clearly situated just before the inner distal end, especially noticeable in smaller individuals; 4) metatibia is less strongly incurved; 5) male genitalia are clearly differently shaped, especially the parameres are deeply and roundly emarginate on either dorsal portion, whereas in *O. karasuyamai*, the parameres are not deeply nor roundly emarginate on either dorsal portion.

*Etymology.* This species is dedicated to Dr. F. Z. VAZ-DE-MELLO, the nomenclator of this genus.

## Acknowledgments

We wish to express our cordial thanks to Mr. P. SCHOOLMEESTERS for literatures. This study was supported in part by a Grant-in-Aid from the Japan Society for the Promotion of Science (No. 17405011).

## 要　　約

越智 輝雄・近　雅博・Sri HARTINI：スマトラ島の *Ochicanthon* 属の１新種．———インドネシア・スマトラ島西部から *Ochicanthon* 属の１新種，*O. vazdemelloi* を新種記載した．本種は，スマトラ北部に分布する *O. karasuyamai* に近縁であるが，♂交尾器及び外部形態のいくつかの特徴で明瞭に区別される．

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*Entomological Review of Japan*, **64**(1): 107–112

# Notes on the Coprophagous Scarab-beetles (Coleoptera: Scarabaeidae) from Southeast Asia (XX)

## Two New Species of the genus *Onthophagus* from Borneo and the Malay Peninsula

Teruo OCHI
Kôhûdai 5–21–6, Toyono-cho, Toyono-gun, Osaka, 563–0104 Japan

and

Masahiro KON
School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522–8533 Japan

**Abstract** Two new species of *Onthophagus* are described under the names of *O. (Onthophagus) hartiniae* sp. nov. from South Kalimantan and *O. (Onthophagus) tsubakii* sp. nov. from the Malay Peninsula.

Recently, we have made close examinations on *Onthophagus* specimens from the Sundaland in the first author's collection, and found two species distinct from any known species of this genus. Thus, we describe two new species of this genus from South Kalimantan and the Malay Peninsula.

### *Onthophagus* (*Onthophagus*) *hartiniae* sp. nov.

(Figs. 1, 3–4)

Length: 8.0–9.8 mm: width: 4.5–5.4 mm (n=8).

Male. Body moderate-sized, oval, fairly strongly convex above; dorsal side entirely glabrous, strongly shining except for distinctly and almost opaque pronotum; pygidium weakly shining to subopaque; ventral side shining, partly clothed with yellowish brown hairs. Color uniformly black, without metallic luster; abdominal sternites sometimes with a pair of vague reddish brown patches on each side; legs usually almost black, occasionally partly reddish; mouth parts and palpi reddish brown; antennae with foot-stalks reddish brown, club segments dark reddish brown.

Head transverse, somewhat produced forward, with anterior margin widely semicircular; clypeal margin broadly parabolic in outline, thickly bordered and weakly reflexed, with apex usually rounded; frontoclypeal suture sharply and strongly carinate, long and slightly procurved; genal sutures also carinate, but a little weaker, and conjointed with frontoclypeal one far apart from either margin; posterior portion of head armed with rather short strong transverse carina between eyes, which is clearly postcurved and slightly produced upward on either side; surface weakly and transversely wrinkled on clypeus, rather sparsely and finely punctate, the punctures becoming larger toward genae.

Pronotum clearly strongly and evenly convex, about 1.4 times as wide as long (n=3), with a median longitudinal impression very weak; anterior margin emarginate, broadly bordered; lateral margins gently rounded in front, only slightly sinuate behind in dorsal view, finely bordered; anterior angles strongly produced forward, rectangular or slightly sharper, and rounded at tip; posterior angles obtuse; basal margin entirely rounded or obtusely angled at the middle, almost unbordered; disc obtusely and shortly declivous in front, with the upper edge of the declivous area very faintly ridged; surface strongly micro-granulose, fairly sparsely covered with very fine punctures, the punctures becoming denser and coarser toward sides.

Elytra distinctly strongly convex, about 1.3 times as wide as long (n=3); striae distinctly and somewhat widely grooved, finely and rather vaguely ridged on both sides throughout; strial punctures distinct though small, partly transverse, sparse, scarcely notching either margin of intervals; 7th stria not curved but almost parallel to 6th near base; intervals slightly convex, strongly shining, sparsely and rather finely punctate.

Pygidium slightly convex, carinate at base, clearly micro-granulose, sparsely covered with small punctures, which become larger toward sides. Protibiae somewhat short, stout and slightly curved, with four strong external teeth; terminal spur slender though weakly incurved and slightly broadened near apex. Meso- and metatibiae fairly short and stout.

Aedeagus distinctly robust. Phallobase about 1.8 mm in length (n=1), about 0.8 mm in apical width (n=1). Parameres about 1.0 mm in length (n=1), gradually narrowed toward apices in dorsal view, with each apex weakly produced laterad as a slight rounded apico-lateral tooth in dorsal view; the apico-lateral tooth also clearly shorter and stouter than that of *O. borneensis* in lateral view.

Female. Head with anterior margin less rounded than in male and shortly truncate at apex; frontoclypeal carina stronger, more distinctly raised in the middle; posterior carina more strongly raised; surface more strongly punctate, with transverse wrinkles on clypeus stronger and denser. Pronotum also shortly declivous as well as in the male, though the ridge weaker. Protibiae with four external teeth stronger than in male; terminal spur longer and incurved in front.

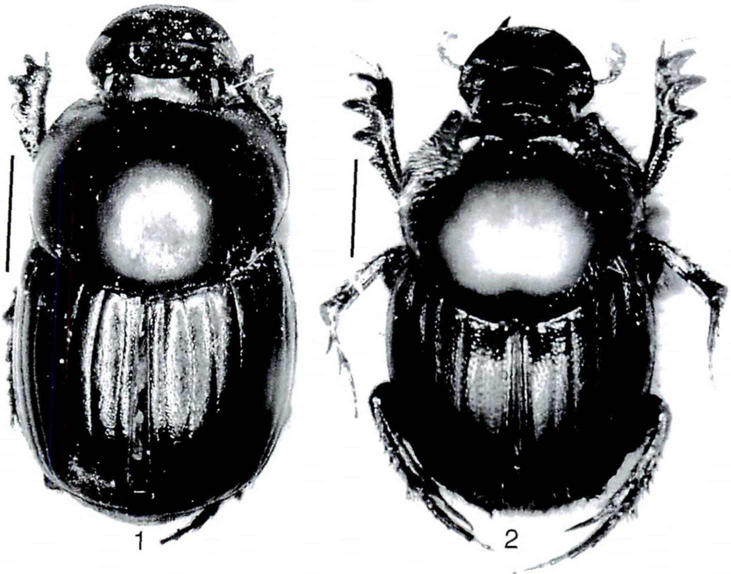
*Type series*. Holotype: Loksado Village, 900 m alt., South Kalimantan, Indonesia, IX. 1997. Paratypes: 3♂♂, 4♀♀, the same data as the holotype.

*Type depository*. The holotype is preserved in the collection of Zoology Division, Research Center for Biology, LIPI, Bogor, Indonesia.

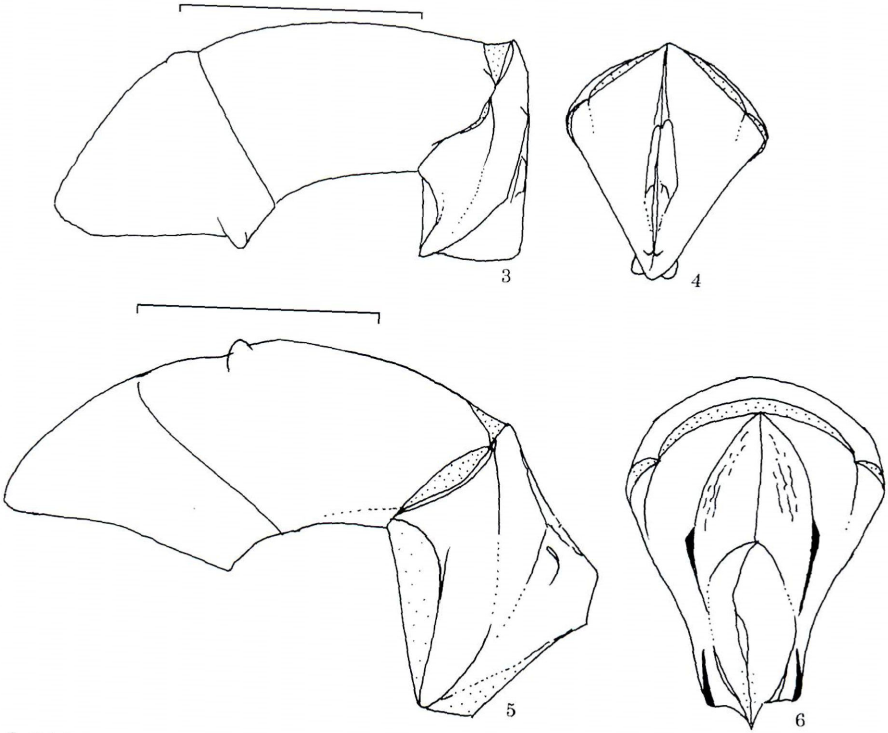
*Distribution*. Borneo (Kalimantan).

*Etymology*. This species is dedicated to Dr. Sri HARTINI, LIPI, Bogor, Indonesia, who is one of collaborators in our studies on Indonesian dung beetles.

*Notes*. The present new species is closely related to *Onthophagus* (*Onthophagus*) *borneensis* HAROLD, but can be easily distinguished from the latter by the following characters: 1) body is clearly smaller; 2) pronotum is strongly opaque and in contrast elytra is clearly shining, whereas in *O. borneensis*, both are shining, at most partly subopaque; 3) pronotum is fairly strongly and evenly convex in the middle, whereas in *O. borneensis*, the pronotum is at most strongly convex; 4) in male, the posterior carina is not so developed, nor as a distinct horn on either side of the summit, whereas in *O. borneensis*, it is mostly well developed as a distinct



Figs. 1–2. Habitus of *Onthophagus* spp., scale 2 mm. —— 1, *O.* (*Onthophagus*) *hartiniae* sp. nov.; 2, *O.* (*Onthophagus*) *tsubakii* sp. nov.



Figs. 3–6. Male genitalia of *Onthophagus* spp., scale 1 mm. —— 3–4, *O.* (*Onthophagus*) *hartiniae* sp. nov., 3, lateral view, 4, frontal view; 5–6, *O.* (*Onthophagus*) *tsubakii* sp. nov., 5, lateral view, 6, frontal view.

horn on either side of the summit; 5) male genitalia are clearly robuster than those of *O. borneensis* with apico-lateral tooth shorter and stouter.

### ***Onthophagus* (*Onthophagus*) *tsubakii*** sp. nov.

(Figs. 2, 5–6)

Length: 9.2–11.2 mm; width: 5.1–6.2 mm (n= 22).

Body generally moderate-sized, oblong-oval, strongly convex above; dorsal side almost opaque though head and elytra often only slightly shining, with head glabrous, pronotum glabrous on the broad median portion and distinctly clothed with noticeably long white hairs on anterior and lateral portions, elytra sparsely clothed with suberect yellowish white hairs, which are clearly finer than those on pronotum; pygidium distinctly hairy; ventral side opaque or weakly shining in part, densely clothed with reddish hairs. Color uniformly black; mouth organs, palpi, legs more or less reddish; antennal foot-stalks reddish brown, club segments pale yellowish brown.

Male. Head semicircular in outline; clypeal margin usually rounded, sometimes slightly truncate at apex, with marginal line rather thickly bordered and slightly reflexed; frontoclypeal suture clearly carinate, the carina long, occupying half width of head, weakly curved and rather fine; genal sutures finely defined, not carinate though extended to mid-eye level on frons; genae moderately produced laterad, with genal corner very obtusely angled or rounded behind the middle, marginal line finely bordered; posterior portion of head produced as a pair of short horns, which are triangular in outline from frontal view and connected by a sharp carina; in smaller males, the horns reduced to a pair of short points; upper surface of head weakly microgranulose, with clypeus strongly and transversely wrinkled, genae very densely and rugosely covered with small to coarse strong punctures, frons to vertex rather sparsely covered with small and ill-defined punctures.

Pronotum fairly strongly convex, about 1.2 times as wide as long (n=3); a median longitudinal impression very obtuse basally; anterior margin strongly bisinuate, distinctly bordered; lateral margins clearly sinuate in front and also strongly so behind, distinctly bordered; anterior angles strongly produced forward, with rounded corner; posterior angles obtuse; basal margin obtusely angled at the middle, only slightly bordered in the middle and unbordered laterally; disc with antero-median portion strongly produced forward as a broad quadrate protrusion and strongly excavated on either side; the protrusion flattened on anterior face and reversely trapezoidal in outline from frontal view, with the summit forming a pair of straight transverse carinae; the carina strongly projected laterad on either side and interrupted at the middle; in smaller males, the protrusion becoming smaller with summit less strongly projected laterad; surface distinctly microgranulose except for the weakly shining protrusion, sparsely and finely punctate, and glabrous in middle, the punctures becoming denser, fairly larger and asperate toward marginal portions.

Elytra moderately convex though somewhat concaved at the middle of base, about 1.5 times as wide as long (n=3); 7th striae almost parallel to the 6th or only slightly curved near base; striae distinctly and rather shallowly grooved, finely ridged throughout on both sides; strial punctures sparse, slightly notching either margin of intervals; intervals almost weakly convex and somewhat uneven, distinctly micro-granulose though partly weakly shining, rather densely covered with strong asperate punctures, the punctures bearing short oblique wrinkles behind.

Pygidium gently convex, obviously carinate at base, strongly micro-granulose, densely and strongly punctate. Protibiae slender, weakly incurved, armed with four external teeth; 1st tooth sharp, 2nd slightly larger than 1st, 3rd rather smaller, 4th small; terminal spur sharply pointed.

Aedeagus stout. Phallobase clearly short, about 2.0 mm in length (n=1), about 1.0 mm in near apical width (n=1). Parameres remarkably large, about 1.3 mm in length (n=1), with lateral portions simply formed and gradually narrowing toward apices in dorsal view, very short and robust in lateral view, each apex slightly lobed in dorsal view.

Female. Head with clypeal margin more distinctly truncate at apex; frontoclypeal suture more strongly carinate and raised; vertex with a strong transverse carina, the carina slightly produced upward as three points on either side and at the middle, the median one of which is clearly stronger; surface more distinctly shining, more strongly and transversely wrinkled on clypeus, irregularly granulate or sculptured on genae, rather closely and strongly punctate on frons. Pronotum clearly less strongly convex than in male, more narrowly declivous in front and more weakly produced forward on the antero-median portion; the declivous area with a pair of strong transverse carinae on the upper edge as well as in male but slightly weaker; each carina clearly procurved. Protibiae shorter, with four external teeth fairly stronger.

*Type series*. Holotype: ♂, Penan Hills, Penan Is., Malaysia, 21. VIII. 2005, M. KON leg. Tanah Ratah, Malay Peninsula, 1. V. 1987. Paratypes: 4♂♂, 8♀♀, the same data as the holotype; 4♂♂, 5♀♀, Tanah Rata, Malaysia, 7. IV. 1976, Y. MIYAKE coll.

*Type depository*. The holotype will be deposited in the collection of the School of Environmental and Natural Resource science, University Kebangsaa Malaysia .

*Distribution*. Malay Peninsula.

*Etymology*. This species is dedicated to Prof. Yoshitaka TSUBAKI, Kyoto University, who gave the first author opportunities to study a large series of specimens from the Malay Peninsula.

*Notes*. The present new species is closely related to *Onthophagus sumatranus* LANSBERGE from Sumatra, but can be distinguished from the latter by the following characters: 1) pronotum is broadly glabrous in middle and distinctly hairy on the marginal portions, whereas in *O. sumatranus*, it is entirely hairy; 2) pronotum is sparsely covered with clearly fine punctures, whereas in *O. sumatranus*, it is rather sparsely covered with small punctures; 3) intervals of elytron are weakly convex and uneven, somewhat densely covered with strong asperate punctures, whereas in *O. sumatranus*, they are flat and not uneven, sparsely covered with fine to small asperate punctures; 4) in male, cephalic horn is clearly short instead of being well developed and long horns; 5) pronotum has a quadrate protrusion on the antero-median portion, whereas in *O. sumatranus*, it has not such a protrusion there; 6) in female, pronotum has a pair of strong carinae in front instead of being clearly weaker ones; 7) male genitalia with parameres are clearly shorter and differently shaped.

## 要　　約

越智 輝雄・近　雅博：東南アジア産食糞性コガネムシ類の覚書（その 20）ボルネオ及びマレー半島からのエンマコガネ *Onthophagus* 属 2 新種. ——— *O. (Onthophagus) hartiniae* sp. nov. をボルネオ島カリマンタンから，*O. (Onthophagus) tsubakii* sp. nov. をマレー半島から記載した。

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   Blackwelder, R. E., 1936. Morphology of the coleopterous family Staphylinidae. Smithsonian miscellaneous Collections, **94** (13): 1–102

   Blackwelder, R. E., 1952. The generic names of the beetle family Staphylinidae with an essay on genotypy. Bulletin of United States National Museum, **200**: i-iv+1–483.

   Müler, J., 1925. Terzo contributo alla conoscenza del genere Staphylinus L. Bollettino Societa entomologica Italiana, **57**: 40–48.
6. 標本のデータは以下のように表記する．

   （例）3♂♂, 2♀♀, Amaishi, Hyôgo, 28. V. 1995, Y. Hayashi leg.
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